

THE DOCK & HARBOUR AUTHORITY

No. 124. Vol. XI.

FEBRUARY, 1931.

Editorial.

Proposed Harbour at Haifa.

Owing to the scarcity of good harbour accommodation on the Eastern shores of the Mediterranean, and also with a view to developing commerce on these shores, the harbour of Haifa has been selected as the most suitable for development.

Boats calling at Haifa have had to anchor about half-a-mile off shore, and the only means of transportation from vessel to shore is by means of lighters, and naturally this means of transportation was considerably hindered in bad weather. Recently it has also become necessary to carry out dredging in the neighbourhood of the jetty to ensure sufficient depth of water even for the lighters.

The chief features of the proposed harbour, now under construction, will include a main breakwater running approximately from west to east for a length of about $1\frac{1}{2}$ miles and continuing the shore line near Ras-el-Kerum. A lee breakwater about half-a-mile long will be formed by prolonging the existing railway jetty northwards.

Access will be given to the area of water enclosed by an entrance 600-ft. wide, and on the shore side of this area a strip of land will be reclaimed, being retained by rubble dykes and bounded on its north side by a wharf wall 1,100-ft. long with a depth of water of 31-ft. and also by a quay 950-ft. long for lighters.

Two single-storey transit sheds will be built at the wharf wall and full railway and road facilities furnished, with the necessary equipment. Sufficient depths of water will be provided within the harbour for the accommodation and manœuvring of cargo steamers and liners, and full provision is being made for future extensions and for the development of the reclaimed area.

The stone for the breakwaters and other works is being quarried near Athlit and the estimated cost of the works authorised is about one-and-a-quarter millions sterling.

An illustrated article describing these developments appears on another page and also forms the subject of this month's supplement.

Ardrossan Harbour Development.

The arrival at Ardrossan of the motor-ship "El Mirlo" (length 459.7-ft., beam 60-ft., deadweight tonnage 11,552) on January 14th marks a definite stage in the advancement of the port and creates a new record for the size of vessel accommodated. The vessel berthed in the newly constructed deep water berth, North Montgomerie Pier. The adequacy of the works was previously demonstrated by the berthing of a tanker of slightly smaller dimensions, the s.s. "Spondilus," which arrived on 22nd December and sailed on 30th December, 1930. The new berth is 580-ft. in length with a dredged width of over 70-ft. and a depth of 28-ft. at low water spring tides. The depths of the approaches to the berth are in accordance with the published tide tables of the port.

Death of Captain Wm. C. Bacon.

We regret to announce the death of Captain Wm. C. Bacon, chairman of the Manchester Ship Canal Company and head of the firm of Sivewright, Bacon and Co., who passed away on January 12th at his residence, "Ashford," Wilmslow, at the age of 77.

Captain Bacon joined the board of the Manchester Ship Canal Company in 1902, placing his wide experience of maritime affairs at the disposal of the company, and was appointed chairman in 1916, on the death of Mr. John K. Bythell, a position which he held up to the time of his death.

Captain Bacon went to sea as a youth and obtained his first command in his early twenties. Before he attained the age of thirty he had, in partnership with the late Mr. W. J. Sivewright, founded the firm of Sivewright, Bacon and Co., ship-owners and brokers, at West Hartlepool. In 1896, shortly after the opening of the Manchester Ship Canal, the firm moved its headquarters to Manchester.

Captain Bacon had wide associations in Manchester's commercial life; he was a director of the Manchester Chamber of Commerce and of the Manchester Dry Docks Co., and his charitable interests were well known. He was a Justice of the Peace for the County of Lancaster, and in 1929 was President of the Dock and Harbour Authorities' Association.

Ribble Navigation.

On the 17th January a presentation was made to the Ribble Chief Mechanical Engineer, Mr. Robert Chirnside, at the Dock Offices, Preston, on the occasion of his retirement. The presentation was made by Mr. James Barron, the Engineer and General Superintendent.

Mr. Chirnside served his apprenticeship as a fitter at the works of Messrs. William Allsup and Sons, Ltd., Engineers and Shipbuilders, Preston.

In September of 1904, he entered the services of the Corporation of Preston, Ribble Navigation Department, as a fitter in their Engineering Workshops, and was appointed foreman in June, 1912. During the war period, whilst the Ribble Navigation Department were engaged in the manufacture of shells, he was foreman in charge of night operations.

Mr. Chirnside was appointed Chief Mechanical Engineer on February 1st, 1919, and in that capacity has had entire charge of the repair and maintenance of the whole of the land plant and floating craft on the engineering side, to which considerable additions have been made during the time he has been chief mechanical engineer.

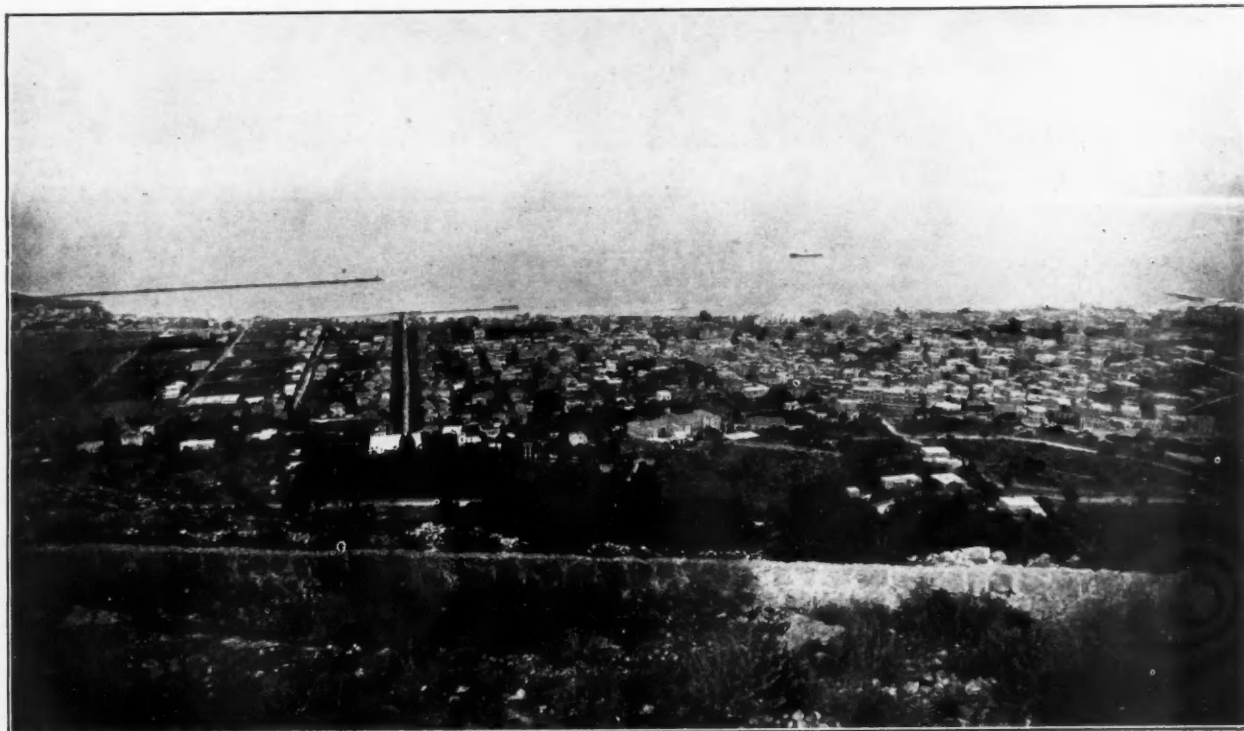
Japanese Ports and Foreign Trade.

At the present day more than 60 per cent. of the exports and 70 per cent. of the imports of Japan pass through the ports of Kobe and Yokohama. But in the former days the concentration at these two ports of foreign trade was more conspicuous, and in 1900, 80 per cent. of the exports and 85 per cent. of the imports passed through them. In the early days of the Meiji era, Yokohama far surpassed Kobe in volume of goods exported and imported, but later the imports of the latter port swelled, until in 1893 the imports of Kobe exceeded those of Yokohama. In 1925 the imports through Yokohama fell to half those through Kobe. In exports Yokohama is still ahead, but the increase in the trade through Kobe, even in the export business, has been remarkable, especially since the great earthquake in 1923, and the volume of exports through these two ports tends to become equal. In 1927 the exports through Yokohama amounted to 374,503,000 dollars, while those through Kobe came up to 352,865,000 dollars, leaving a difference of only 21,638,000 dollars.

Japan's foreign trade reached high-water mark in 1925, the exports for the whole country (Korea and Formosa included) amounting to 1,188,949,000 dollars and the imports to 1,367,268,000 dollars. A decline set in after that year, and in 1927 the exports dropped to 1,032,511,000 dollars and the imports to 1,179,268,000 dollars. In that year the decline in imports was more remarkable than that in exports and the excess of imports shrank to 146,757,000 dollars, the lowest mark reached since 1919, when it was only 89,575,000 dollars. But in 1929, contrary to the preceding years, an increase took place in both exports and imports, causing a heavy decrease in the excess of imports, which stood at 85,484,000 dollars, or about half that of the previous year. This favourable change in foreign trade made much easier the execution of the difficult task of removing the embargo on gold. Figures in thousands of dollars:—

		Japan Proper	Korea and Formosa	Total
Exports:	1927	996,151	36,360	1,032,511
	1928	985,977	33,020	1,018,996
	1929	1,074,310	34,480	1,108,790
Imports:	1927	1,089,522	89,746	1,179,268
	1928	1,098,157	88,240	1,186,397
	1929	1,108,120	86,154	1,194,274

Haifa Development Works.



The Main Breakwater, taken at the end of last September, when it was 785 metres long. By the end of December it was 1,050 metres long.



A Temporary Railway for the Works has been Constructed, running along the Foreshore from West to East of the Harbour. This photograph shows the present Eastern Terminus on the existing Railway Jetty where work will shortly commence on the Lee Breakwater.

Haifa Development Works.



General View of the Breakwater and Rubble Dyke.

THE development of commerce along the Eastern shores of the Mediterranean is much handicapped by the absence of reasonably good harbour accommodation, and at no place South of Beirut (in Syria) is there anything better than open roadsteads.

Practically the whole of the overseas trade of the Mandated Territory of Palestine is dealt with at Jaffa and Haifa and many schemes have been evolved, both before the war and since, for the construction of harbours at these places.

As the result of considerable investigation, Haifa has been selected for development, not only on account of the trade at present carried on, but also for its potential value in serving the extensive hinterland of Transjordan and beyond, for which it forms the best outlet to the sea for rail communication.

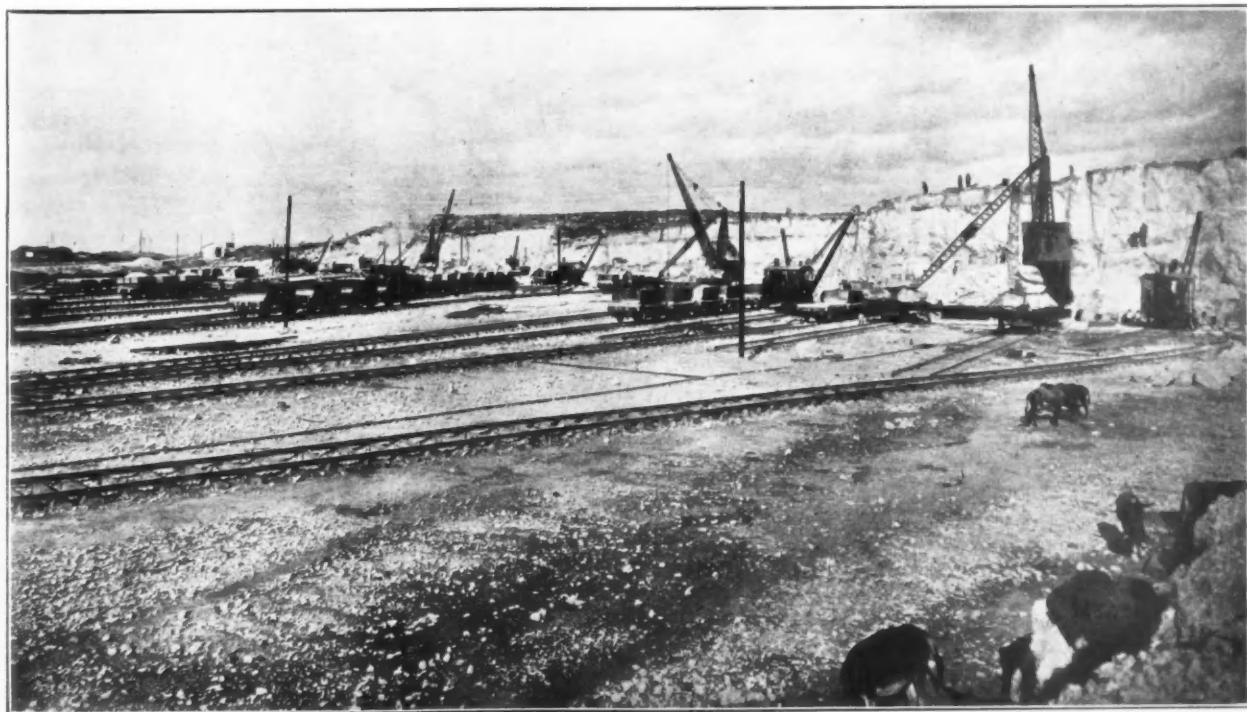
The town of Haifa is situated on the Southern shore of the Bay of Acre and the roadstead in which vessels calling at the port lie at anchor is well protected from the South and South-West by Mount Carmel, the western extremity of which rises almost abruptly from the sea to a height of nearly 1,000-ft.

On the northern slope, which is less steep as it nears the bay, stands the town with its railway station and jetty.

Steamers usually anchor about half-a-mile from the shore and lighters are employed for the transport of passengers and cargo to and from the jetty.

These arrangements have all the disadvantages inherent to lightering in exposed waters; in bad weather trade is interrupted and the damage to and loss of goods is said to be considerable. Moreover, it has recently become necessary to dredge in the neighbourhood of the jetty in order to maintain sufficient depth of water, even for lighters.

The proposed works have been designed by Messrs. Rendel, Palmer and Tritton, the engineers consulted by the Crown Agents for the Colonies on behalf of the Palestine Government. The works consist of a main breakwater about 1½ miles long, continuing the northern line of shore near the point of Ras-el-Kerum and running in an easterly direction roughly parallel with the town front, and a lee breakwater, about half-a mile long, formed by prolonging the existing jetty.



General View of North Quarry (Three Units). Maximum Height of Working Face 51-ft. above Quarry Floor.

Haifa Development Works—continued.



General View of Blockyard in course of Preparation.

On the shore side of the area thus enclosed a strip of land is to be reclaimed, along the outer edge of which a wharf will be constructed for cargo steamers and lighters. Provision is being made for a deep-water berth 1,100-ft. long to accommodate two or three steamers, and a quay 950-ft. long for lighters. Two single-storey steel-framed transit sheds are to be built opposite the steamer berth and full railway and road facilities provided.

shelter of the breakwaters. Moorings for cargo steamers will also be provided in the vicinity of the lighter quay.

The two principal features of the work will be the construction of the breakwaters, for which 1,000,000 tons of rock will be required, and the dredging of over two million cubic yards of sand in deepening the harbour and reclaiming the strip of land along the shore. The stone for the breakwaters is obtained locally from quarries opened up in the coastal sandstone ridge about 10 miles south of Haifa, and is conveyed to the site of the works on the Palestine railways.

The works which are estimated to take about three years to complete, are being carried out in accordance with the provisions of the Palestine and East Africa Loans Act, 1926, and are being constructed administratively by the Palestine Government in consultation with the engineers.

The trade of Palestine ports is shown in the following tables:

JAFFA.

Registered Tonnage of Vessels entering.

	Sailing Vessels		Steamers		Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage
1910	1,800	20,869	707	1,115,000	2,507	1,135,869
1913	1,341	16,166	665	1,160,315	2,006	1,176,481
1921	928	15,999	422	628,450	1,350	644,449
1922	658	15,304	446	733,398	1,104	748,702
1923	527	12,209	375	703,778	902	715,987
1924	378	10,038	376	792,115	754	802,153
1925	734	16,414	504	1,143,485	1,238	1,159,899
1926	887	20,561	618	1,276,524	1,505	1,297,085
1927	637	16,821	459	957,715	1,096	974,536
1928	—	13,755	—	1,098,220	—	1,111,975
1929	803	20,156	568	1,505,488	1,376	1,525,644

Tonnage and Value of Trade.

	Exports		Imports		Total	
	Tons	Value	Tons	Value	Tons	Value
1910	64,129	636,000	76,000	1,700,500	140,129	2,336,500
1913	(approx.) 80,000	650,000	95,000	1,000,000	175,000	1,650,000
1920	(approx.) 23,387	247,960	31,011	1,629,139	54,398	1,877,099
1921	43,080	365,300	59,694	1,771,243	102,774	2,136,543
1922	52,845	493,300	103,209	2,252,314	156,104	2,745,614
1923	—	610,946	—	2,253,086	—	2,864,032
1924	—	659,150	—	2,531,997	—	3,191,147
1925	—	854,323	—	4,031,722	—	4,886,045
1926	45,720	—	123,330	—	169,050	—
1927	32,559	—	104,342	—	136,901	—
1928	33,069	963,565	113,269	3,455,689	146,338	4,419,254
1929	75,838	877,285	129,539	3,591,942	205,377	4,469,227

Export of Oranges.

	NUMBER OF BOXES		Total
	By Sea	By Rail	
1910-11	1,287,000	Nil	1,287,000
1913-14	1,792,000	Nil	1,792,000
1920-21	393,468	408,362	801,830
1921-22	852,364	289,436	1,141,800
1923	728,593	404,955	1,133,548
1924	890,247	213,696	1,103,943
1925	No separate figures available		1,677,596



Pillar Crane for construction of Main Breakwater.

At the eastern end of the lighter quay an area of 10 acres will be set aside as a dumping ground for coal, etc., while the remainder of the newly-made land, some 55 acres in all, will be available for the expansion of the existing business quarter and the relief, by means of new roads, of the congested streets and alleys of the old city.

To meet the expanding tourist traffic (no less than 31 liners with upwards of 9,000 passengers called last season) an area near the entrance of the harbour is to be specially deepened and moorings provided so that a 30,000-ton liner may safely enter the harbour and disembark her passengers within the

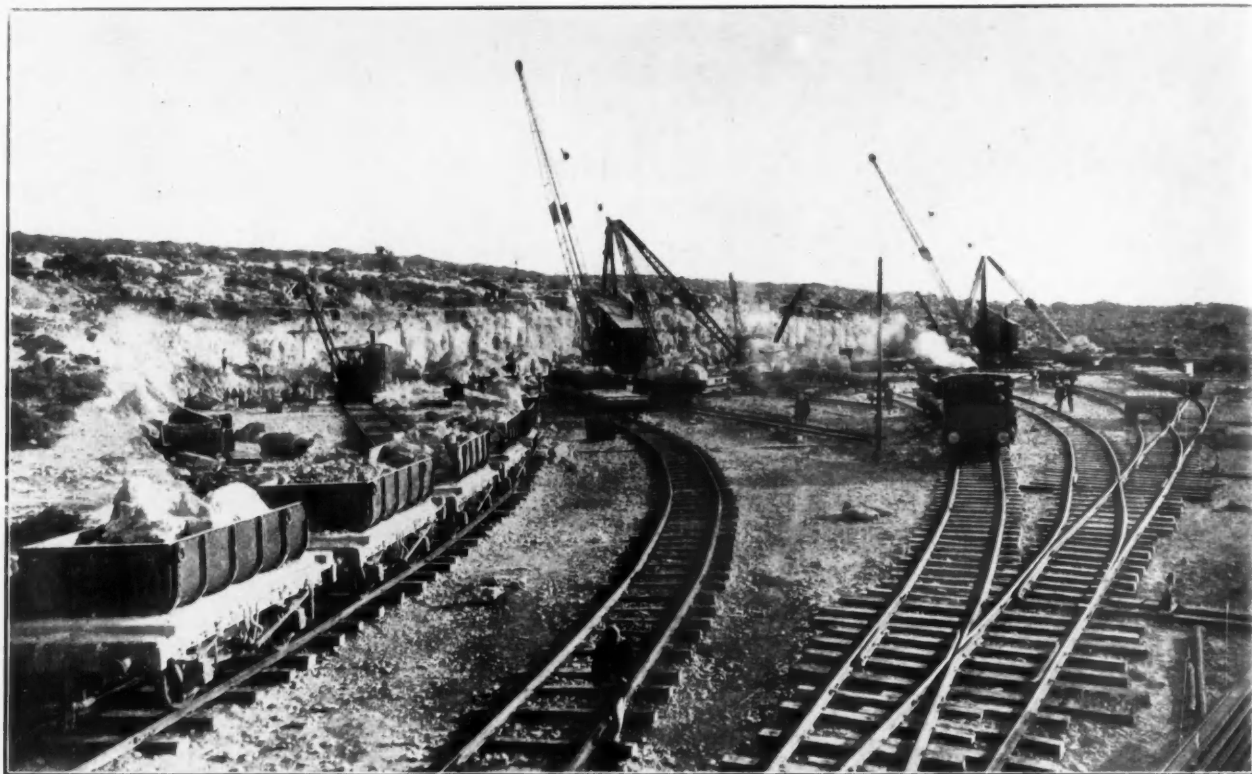
Haifa Development Works.

One of the Storm Water Drains, through the Reclaimed Area and Blockyard, in course of preparation.

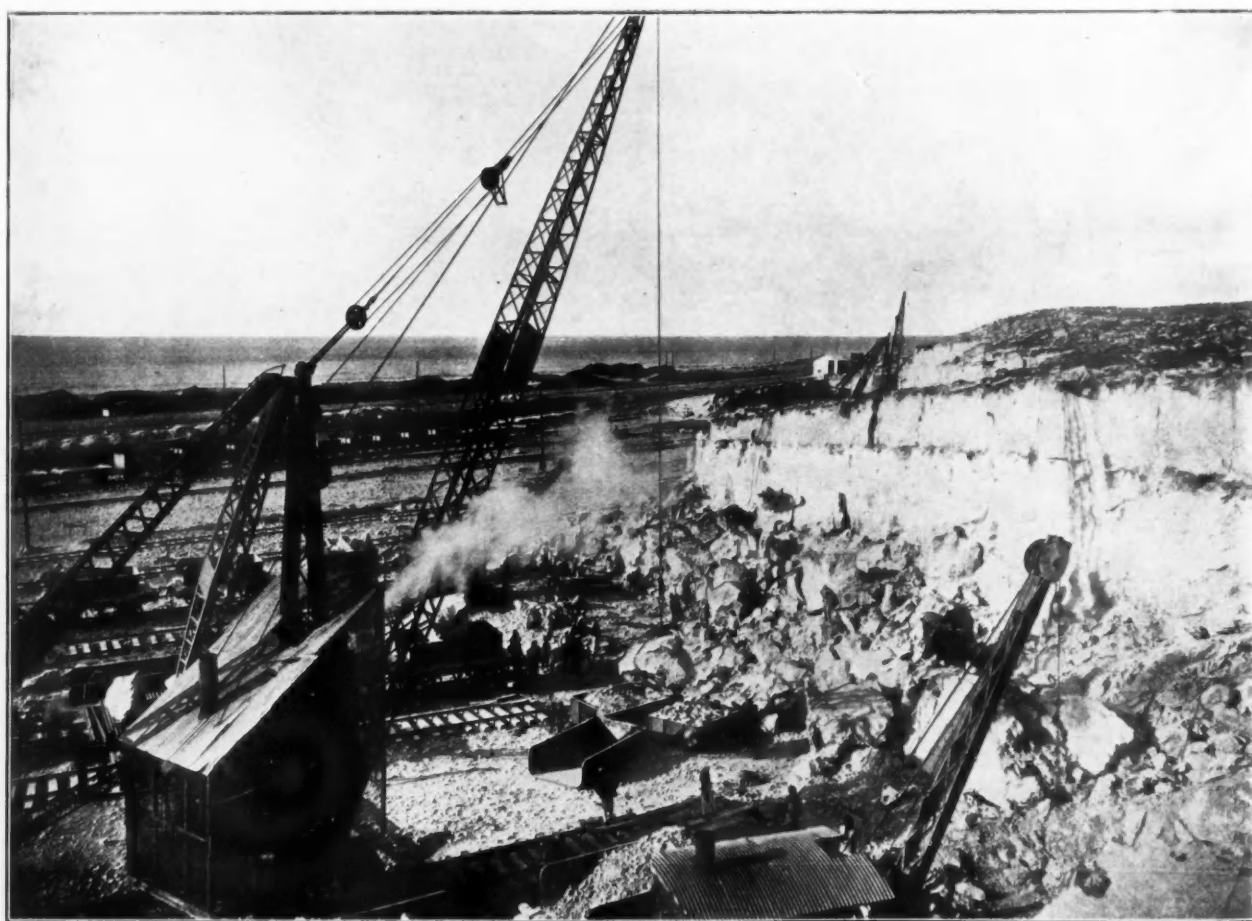


South Quarry Face looking North. Maximum Height of Working Face, 38-ft. above Quarry Floor.

Haifa Development Works.



General View of South Quarry (Two Units).



One of the Faces in the North Quarry.

Haifa Development Works—continued.

HAIFA.

Tonnage and Value of Trade.

Registered Tonnage of Vessels entering.

	Sailing Vessels	No.	Steamers	No.	Total
	No.	Tonnage	Tonnage	Tonnage	Tonnage
1908	725	9,527	606	776,936	1,331 786,463
1911	778	15,903	516	750,260	1,294 766,168
1920	930	9,462	275	298,038	1,205 307,500
1921	970	15,840	401	518,331	1,371 534,171
1922	782	15,357	405	710,336	1,187 725,693
1923	485	8,698	218	509,424	703 518,122
1924	416	6,803	228	535,865	644 542,668
1925	542	7,516	250	688,131	792 695,650
1926	1,049	14,569	491	1,021,806	1,540 1,036,375
1927	807	13,645	238	612,827	1,045 626,472
1928	—	11,461	—	682,639	— 691,100
1929	952	19,055	507	1,267,105	1,459 1,286,160

	Exports	Value	Imports	Value	Total
	Tons	£	Tons	£	Tons
1908	—	187,600	—	574,000	— 761,600
1911	—	175,200	—	574,800	— 750,000
1920	9,575	583,594	22,954	1,804,439	32,529 2,388,033
1921	24,445	570,723	144,111	3,528,294	168,556 4,099,017
1922	22,161	624,156	81,824	2,308,605	106,985 2,932,761
1923	—	112,360	—	1,320,213	— 1,432,573
1924	—	173,780	—	1,453,352	— 1,627,132
1925	—	133,371	—	1,877,287	— 2,010,658
1926	19,875	—	105,915	—	125,790 —
1927	53,978	—	131,281	—	185,249 —
1928	23,854	269,851	137,330	2,167,845	161,184 2,437,696
1929	39,323	412,812	153,867	2,461,833	193,190 2,874,645

The Port of New York.*Latest Data issued by the Bureau of Commerce.***The Port of New York and the Leather Industry.**

THE United States produces about 35 per cent. of the world's supply of leather. During the calendar year of 1929 the total hide and skin imports in the country were valued at \$137,000,000, and the total exports of leather, \$43,000,000. In the production of fine leathers made from goat and kid skins the United States contributes 70 per cent. of the total world production. Since but a limited number of goats and kids are slaughtered annually in this country the industry depends upon India, Brazil, China, Mexico and the Argentine for its supply of skins.

More than half of the tanneries in the country are located in Massachusetts, Pennsylvania, New York and New Jersey, Philadelphia and Wilmington being the centre of the manufacture of leather from goat and kid skins.

This industry depends upon the Port of New York for efficient handling of its products. In 1929 the Port of New York handled 74 per cent. of the goat and kid leather exported from the United States, while Philadelphia handled 5 per cent. and Boston 2 per cent.

Since United States leather was shipped to 53 foreign countries last year, the Port of New York, with its fast, frequent sailings all over the world made an ideal point of distribution.

Value of Foreign Commerce at the Port of New York.

The value of exports and imports at the Port of New York during November, 1930, amounted to \$197,503,000, compared with \$208,900,000 in the same month of 1929, a decline of 36 per cent. Exports declined 31 per cent., and imports 40 per cent., from the corresponding month of 1929.

More Grain Exports.

Exports of domestic and Canadian grain during the month of November, 1930, showed an appreciable gain over the same month of 1929, the increase being entirely in the Canadian commodity.

	NOVEMBER		Net Change	
	1930	1929	Amount	Per Cent.
	(Bushels)	(Bushels)	(Bushels)	
Through the Port of New York—				
Domestic and Canadian Grain	3,596,000	1,907,000	1,689,000	88.5
Domestic Grain	—	9,000	—185,000	—99.5
Canadian Grain	3,587,000	1,713,000	1,874,000	109.5

Steamship Passenger Traffic via Port of New York.

For the first ten months of the year over a million people passed through the Narrows, bound to or from foreign ports. To be exact, 1,005,647 passengers were carried in or out of the Port of New York by those steamship lines operating in foreign service. This compares with a total of 990,165 passengers carried during the same period in 1929, indicating an increase of over 1.5 per cent. this year.

The October figures are under the same month of 1929, most of the decline taking place in the inbound movement, particularly that of immigrants, as will be seen by the following table:—

		October 1930	October 1929
INBOUND.			
Aliens, Immigrant	...	9,757	16,026
" Non-Immigrant	...	17,594	19,957
United States Citizens	...	33,351	38,712
Total	...	60,702	74,695
OUTBOUND.			
Aliens, Emigrant	...	3,206	3,126
" Non-Emigrant	...	16,155	13,769
United States Citizens	...	25,081	26,348
Total	...	44,442	43,243
Inbound and Outbound Total	...	105,144	117,938
Total—First 10 months	...	1,005,647	990,165

The above number of overseas passengers moving through the Port of New York during October, 1930, constitutes 75.5 per cent. of the total moving through all ports of the United States.

Commerce at Port Newark.

Receipts of cargo other than lumber at Port Newark continues to be greater than 1929. During the month of November, 1930, cargo other than lumber discharged by vessels at Port Newark amounted to 21,733 tons compared with 18,613 tons during the same month a year ago, being an increase of 17 per cent.

Receipts of lumber decreased from 33,335,000 board feet in November, 1929, to 9,191,000 board feet in November, 1930, a decline of 72 per cent.

The tonnage delivered at Port Newark by vessel during the month was carried in 32 steamers, lighters and barges.

Vessel Movements in Foreign Trade.

The number of vessels entered and cleared in foreign trade at the Port of New York during the month of November, 1930, was less than during the same month of 1929.

	NOVEMBER			
	1930	1929	1930	1929
	Number of Vessels	Vessel Tonnage	Number of Vessels	Vessel Tonnage
Entrances	485	2,194,780	538	2,299,743
Clearances	470	2,144,883	555	2,451,308

Steamship Sailings.

The total number of sailings from the Port of New York for the month of November shows a decline of approximately 5 per cent. under the same month last year. The regular foreign services fell off about 10 per cent. with more than half the trade routes registering decreases. By far the largest drop in the foreign field took place in sailings to the East Coast of South America. For November there were only 25 sailings in that trade as against 36 a year ago, a falling-off of 30 per cent.

Domestic sailings did not fare so badly, the greatest proportionate decline being in the sailings of Coastal and Inter-coastal tankers, particularly the former.

Saturday, November 22nd, was the peak day of the month, with a total of 84 sailings from the port. There were 38

The Port of New York—continued.

foreign sailings, which included 4 to the United Kingdom, 3 to the Baltic, 3 to the River Plate, 14 to the Caribbean-Mexican ports, and 3 tankers. The 46 domestic sailings included 10 to Atlantic and Gulf ports, 3 to Pacific Coast, 4 tankers, and 4 coal carriers.

New York State Barge Canal.

The New York State Barge Canal was officially declared closed at midnight, November 30th.

During the 1930 season a total of 3,605,357 tons were carried on the canal, exceeding the 1929 record by 729,297 tons, or an increase of 25.4 per cent. While the Erie Division carried the bulk of the traffic, the largest percentages of increase are shown for the Oswego and Cayuga-Seneca divisions. The Champlain division showed only a slight increase.

Much Authorized Channel Improvement remains to be done to New York Harbour.

Recent Congressional action to relieve unemployment by emergency appropriation for rivers and harbours work has aroused an interest in the share which will be allotted to the Port of New York. Out of a total of \$22,500,000 allotted to rivers and harbours work by Congressional emergency action, it is understood that approximately \$3,000,000 has been earmarked for the North Atlantic Division and only about \$434,000 to the Port of New York—about 2 per cent. of the total.

In addition to these emergency funds, which will be available to start work during the remaining months of the fiscal year ending June 30th, 1931, the Chief of Engineers has recently recommended a total appropriation of \$60,000,000 to carry on rivers and harbours work for the fiscal year 1931-32. Of this, \$3,215,000 represents projects for new channel improvements in the Port of New York.

A survey of all the channel improvement projects within the Port of New York shows that Congress has authorized a total of \$47,330,280 as of the beginning of the present fiscal year. Funds made available for new improvements by the War Department Appropriation Act last Spring amounted to \$2,987,000, to which may be added approximately \$434,000 understood to be incorporated in the emergency legislation just passed by Congress. The Chief of Engineers' recommendation for the fiscal year 1931-32 carries \$3,215,000 for the Port of New York.

Provided that no new projects are authorized before June 30th, 1932, there will remain \$41,294,280 of channel improvements in the Port of New York which have been authorized by Congress but have not been covered by funds in the appropriations. At the rate at which money has been allocated for work in the Port of New York during past years, 13 years will elapse from July 1st, 1931, before projects now authorized are entirely financed and completed.

A few of the projects in the Port of New York, totalling \$2,772,500 of Federal participation, await satisfaction of local co-operation requirements by the industries or communities immediately benefited by the improvement; but most of the projects can go forward as fast as Federal moneys are appropriated, contracts can be let, or equipment secured.

New York Harbour Anchorage Channel.

This improvement calls for widening of the Anchorage Channel to 2,000-ft. at 40-ft. depth. This is the entrance channel to the harbour past the main anchorage ground. There is danger from possible collision with anchored vessels in the present restricted fairway.

Total 1929 traffic, 149,186,801 tons, \$16,624,148,244; 1,280,385 passengers.

Authorized project \$500,000. Appropriated for fiscal year ending June, 1931, \$165,000. Recommended for fiscal year ending June, 1932, \$100,000. On latter date this project will require an additional \$325,000 (55 per cent.) unless these funds are authorized at an earlier date.

Bay Ridge—Red Hook Channel.

Widening of present 40-ft. channel by 550-ft. The "Bremen" and "Europa" use this channel to dock at their South Brooklyn piers. 1929 commerce, 21,689,120 tons; \$4,852,779,185; 4,837,427 passengers.

Authorized project \$1,510,600; amount appropriated for fiscal year ending June 30th, 1931, \$250,000. Amount recommended for fiscal year ending June, 1932, \$100,000. On latter date project will require \$1,160,600 (76 per cent.) if funds are not allotted earlier.

Hudson River Channel.

Widening of 40-ft. channel from 2,000-ft. to 2,800-ft. from Battery to 20th Street. This is the channel used by the large trans-Atlantic liners in docking at the Chelsea piers and other

piers on the North River waterfront of Manhattan. 1929 commerce, 75,341,398 tons; \$11,705,131,570; 110,831,521 passengers.

Authorized project \$1,814,600. Amount appropriated for fiscal year ending June, 1931, \$100,000. Amount recommended for fiscal year ending June, 1932, \$70,000. On latter date project will require \$1,644,600 (91 per cent.) to complete if funds have not been allotted earlier.

Newark Bay, Hackensack and Passaic Rivers.

Project for channel 30-ft. deep, 300-ft. wide, from Newark Bay to a point 3,000-ft. above Lincoln Highway Bridge. 1929 commerce 17,051,295 tons; \$581,447,373; 2,382 passengers.

Authorized projects \$2,716,000. Amount appropriated fiscal year ending June, 1931, \$742,000. Amount recommended for fiscal year ending June, 1932, \$100,000. On latter date project will require an expenditure of \$1,874,000 (69 per cent.) if additional funds are not allotted earlier.

Newtown Creek.

Widening of channel at mouth to 200-ft., and dredging of creek proper to 23-ft. for bottom width of 130-ft. 1929 commerce, 7,009,148 tons; \$311,461,339; 2,766 passengers.

Authorized project \$744,300. Amount appropriated for fiscal year ending June, 1931, none. Amount recommended for fiscal year ending June, 1932, \$130,000.

On latter date the project will require an additional expenditure of \$614,300 (83 per cent.), unless additional funds are allotted earlier.

In addition to the above there are important projects in the Harlem River, Jamaica Bay, and other sections of the Port which are only partially completed and which at the present rate of appropriation and progress will not be completed for several years.

New Pier Construction.

The Erie Railroad has under construction a new pier at Weehawken, which will be known as Pier D, upon the site of a former pier of the same designation which burned to the water's edge in 1921.

The new pier, which is about 40 per cent. completed, will be an open pile structure 756-ft. long, 101-ft. in width, and will be three storeys high. The superstructure will be of steel sheathed with sheet metal, and cement floors. Two tracks will extend in a well through the centre of the pier throughout its length on the lower deck, while the two upper floors, served by four elevators, will be used for storage purposes. A depth of 30 to 35-ft. of water will be available on both sides of the pier for vessels loading and discharging. The pier is expected to be ready for use in March, 1931.

Ferry Boats wanted for Istanbul.

The Commercial Secretary to His Majesty's Embassy at Istanbul reports that a local company is calling for tenders to be presented in Turkey for the supply of two steam or diesel engine driven ferry boats.

Firms desirous of offering British built boats can obtain further particulars of this call for tenders upon application to the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1. Reference number A.X. 10712 should be quoted.

Weser Shipping in November, 1930.

Water conditions on the Weser during November were subject to considerable fluctuations and shipping was considerably hindered by a sudden high tide on the 22nd/23rd. From Hanover-Munden the draft depth was 1.86 metres. Then considerable rainfall from the 4th increased this, so that there was an average draft depth of 2.35 metres by the 21st. The high water commenced with unexpected velocity on the 22nd. The water mark on this day reached four metres, and on the 25th and 27th 4.84 metres, causing traffic difficulties. The level has since fallen. On the stretch Minden-Bremen conditions were similar. A draft depth over about 2.40 metres is of no practical use to Weser shipping.

Goods traffic through the Bremen Weser Lock experienced a very considerable decrease in downstream traffic, due to the hindrance to traffic caused by the high water. Amount of goods arrived only amounts to 115,900 tons—that is about two-thirds of that of the previous month. Coal transport decreased by 19,600 tons, gravel and stones by 12,800 tons, and potash and salt by 12,000 tons. Upstream traffic was, with 35,500 tons, 5,000 tons greater than in the previous month, as grain transport was 4,200 tons more and, further, 2,100 tons of English coal went to the interior.

Notes from the North.

G.W.R. Scheme for Birkenhead.

THE Great Western Railway Company, which is about to embark upon a big development scheme on both sides of the River Mersey, has augmented its fleet of motor lorries and horse vehicles for the collection and delivery of goods in anticipation of greatly increased trading when the Mersey Tunnel is completed. For barging direct between Birkenhead and vessels in the Liverpool docks, new waterside premises with electric cranes have been erected.

Maryport Harbour Commissioners.

Mr. Frederick Kelly, who retired recently after 63 years' service under the Maryport Harbour Commissioners, for most part of the time as clerk, has passed away at the age of 79 years. Up to two months ago he regularly attended at the harbour office in High Street. Mr. Kelly served the town and harbour authority for 50 years and the harbour authority for 63 years. He was clerk to the Town and Harbour Trustees, and after the administration was separated for a time held the offices of Clerk to the Urban Council and of Clerk to the Harbour Commissioners. In 1916, however, he resigned the first-named office and acted solely as Clerk to the Harbour Commissioners. He entered the office of the Town and Harbour Trustees under the late Mr. Barnise in 1867. He became assistant clerk and later, on the death of Mr. Barnise, clerk.

Pension Scheme for Dock Board Officials.

Mersey Docks and Harbour Board has adopted a contributory pension scheme for the widows and orphans of salaried officers. Present members of the staff may voluntarily join at rates according to age. The maximum widow's pension is £168 a year. It is now a condition that all men under 25 entering the Board's service as salaried officers shall become contributors. Mr. H. L. Roxburgh, chairman of the Finance Committee, speaking at a recent meeting of the Board, said the committee did not propose that the Board should make any direct contribution to the fund, but suggested that the small expenses of its administration be borne by the Board. The scheme emanated from and had been prepared by the staff under the guidance of the actuary. No responsibility was laid on the Board beyond that they were asked to allow three members of the trust to be on the management committee. The contributions will be worked upon a 2½ per cent. basis and will have a £1,000 limit. That is to say, men will contribute 2½ per cent. of their salaries and their widows or orphans will receive pensions upon salaries up to £1,000 per annum. The pensions will be approximately 20 per cent. of the man's last year's salary. If a man is earning more than £1,000 the widow would only receive pension upon the £1,000. Certain adjustments will be necessary, of course, as regards the older men at present employed. They will be required to pay a little more.

Improving Dock Rail Facilities.

The London, Midland and Scottish Railway Company have agreed to carry out, at their own cost, the work of connecting the Mersey Docks and Harbour Board's lines of rails at the south side of the Langton Branch Dock with the Alexandra Dock Goods Station. The Dock Board engineer is to carry out the work of providing improved railway facilities at the south side of the Langton Branch Dock at an estimated cost of £5,400. Another decision of the Works Committee of the Board is to authorise the engineer to carry out alterations and additions to certain railway lines on the west side of the Gladstone Dock to improve the facilities for exceptional gauge loads at a total estimated cost of £812. The Warehouse Committee has reported suggestions from the collector of Customs with regard to certain alterations required to be made to sheds at the Nelson and Bramley Moore Docks to improve the sheds for transit purposes and recommends that the engineer be authorised to carry out the alterations at a total estimated cost of £1,024.

Future of Birkenhead Ferries.

Representatives of the Mersey Tunnel Committee and the Birkenhead Ferries Committee have held a joint meeting to discuss the question of the future control of the Birkenhead Corporation ferries. When the new tunnel is opened it is expected that the ferries will be seriously affected, and the question whether the ferry boats, both luggage and passenger, will be used to the same extent as at present has to be taken into consideration. Last year nearly 16,000,000 passengers were carried by the service and just over a million vehicles. Under the Mersey Tunnel Act Birkenhead can either transfer the whole or part of the ferry service to the Mersey Tunnel joint committee or carry on the undertaking in the same way as at present. Data and information are being collected by both sides and will be considered at a further meeting to be held shortly.

Chester Plant for Cardiff.

The Great Western Railway has placed a contract with the Hydraulic Engineering Co., Ltd., Chester, for the supply and erection of one movable coal hoist and electrically operated traverser for Queen Alexandra Dock, Cardiff.

Harbour Site Purchased.

Morecambe Corporation has decided to purchase the old harbour site from the L.M.S. Railway Company for £23,000. The question of the purchase has been engaging attention for over 30 years. The original price asked was £26,000.

Seacombe Ferry Improvement.

In connection with the Seacombe Ferry approach improvement scheme, the general manager (Captain Fry) has reported to Wallasey Ferries Committee that unforeseen difficulties had arisen regarding the removal of the submerged sections of the piles of the old Seacombe hydraulic pier and that extra work would be involved. It was resolved that an additional sum be allowed to the contractors as a final payment.

Peel Dock Plan Vetoed.

The Lieutenant-Governor of the Isle of Man has written to the Peel Commissioners on the subject of the proposal to convert a portion of the inner harbour at Peel into a wet dock in which the steamers of the Isle of Man Steam Packet Company could be laid up during the winter months. Careful consideration has been given to this proposal, with the result that it has been found to be impracticable. Quite apart from the question of the cost involved, which would be very considerable for the construction of the dock, the conditions at Barrow, where the Isle of Man Steam Packet Company's steamers at present lay up during the winter months, are in every way eminently suitable for the purpose, and it is very doubtful if the company could be persuaded to abandon the accommodation and amenities so conspicuously satisfactory and inexpensive for anything which could be constructed at the port of Peel.

Manchester Tenders Accepted.

Manchester Corporation Markets Committee has accepted the tender of Messrs. Geo. Clarke and Sons (Manchester), Ltd., of Manchester, for work in connection with the construction of railways, unloading docks, roadways, sheep pens, etc., at the new Cattle and Sheep Market, Mode Wheel. The following sub-contractors in connection therewith have been approved:—Railways—Messrs. R. White and Sons, Widnes; Messrs. Trafford Estates, Ltd., Trafford Park, Manchester; and Messrs. Thomas Summerson and Sons, Ltd., Darlington. Cattle pens, etc.—Messrs. Gorton and Blakemore, Ltd., Atherton; Messrs. W. A. Baker and Co., Ltd., Newport (Mon.); and Messrs. Thomas Blackburn and Sons, Ltd., Preston. Plumbers—Messrs. J. Jeffrey and Co., Manchester, and Messrs. John Turton and Sons, Ltd., Manchester.

Mersey Tunnel Progress.

The Mersey Tunnel Joint Committee reports that the work of lining the under-river portion of the Mersey Tunnel is now approaching completion, there being only 940 tons to be placed out of a total of 52,600 tons of cast iron. On the Birkenhead side underground tunnelling is practically finished and concreting is in hand at three points. In Liverpool, 86.3 per cent. of the excavation work has been done and 66.8 per cent. of the concrete roadway has been laid. Over half of the reinforced roadway under the river has been finished and work is going on at four points. There are 910 men engaged on the four current contracts.

To prevent water percolating into the tunnel and to strengthen the outer shell, cementation is being adopted. The process adopted is to drill holes in the lining of the tunnel and force cement into them, thus consolidating the brickwork and filling the voids between the brick lining and the adjacent strata.

It is believed that a system of graduated lighting is to be installed in the Mersey Tunnel, and that during the day-time to prevent motorists and drivers being blinded through suddenly coming out into the open there will be brighter lighting near the exits than further in the tunnel. Similarly, at night-time, instead of vehicle drivers coming from a very bright tunnel into the darker streets, the lights will be slightly more dim near the exits.

Mr. J. A. Brodie, one of the Mersey Tunnel engineers, has sailed to India in the P. and O. steamer "Viceroy of India" as guest of the Indian Government, in order to take part in the official opening of an important portion of the new city of Delhi. Eighteen years ago Mr. Brodie served on a commission of experts which planned the new capital of the Dependency, and in that capacity spent there two periods of six and five months respectively.

Notes from the North—continued.

Barmouth Sea Defences.

Mr. Lloyd George, M.P., visited Barmouth recently to lay the foundation-stone of the new sea defence work. The laying of the foundation-stone was witnessed by thousands of people.

Rating of Bromborough Dock.

It is reported to the Rating and Valuation Committee of the Bebington and Bromborough U.D.C. that the new dock belonging to Messrs. Lever Bros. at Bromborough would probably be required to be valued for rating purposes this month (February). It was decided to approach Mr. Myles Dixon, the Liverpool rating expert, to value it.

Wallasey to Spend £342,000.

That the first section of Wallasey's new promenade scheme—the construction of the sea wall and a marine lake—may be started forthwith is the result of the Town Council's acceptance of the tender of Messrs. Edmund Nuttall, Sons and Co., Ltd., to construct the marine lake and defence wall at a cost of £342,000. The Unemployment Grants Committee has approved of the Council accepting this tender.

New Slipway for Hoylake.

The Hoylake and West Kirby Urban District Council has now approved the plans for a lifeboat slipway at the end of Stanley Road. The slipway will be used by the motor lifeboat that is now being built, and is expected in Hoylake about August or September of this year. Iron gates will be placed at the end of Stanley Road and will only be opened for lifeboat purposes. The small gate used by pedestrians will be retained. Although the Council has passed the plans, permission to build the slipway has still to be obtained from the Mersey Docks and Harbour Board and the Board of Trade, but it is not expected that either of these authorities will offer any objection.

Whitehaven Harbour Board.

At a meeting of Whitehaven Harbour Board it was decided under a recent Provisional Order to provide a reserve fund, £250 being set aside out of revenue each half year until a total of £5,000 is reached. The chairman (Mr. Brewster) stated that the harbour had not had a very good year, and it was only by paying off a number of men and economising all round that they were in a position to be able to pay the full rate of interest.

Wool Warehouse Leased.

A Liverpool firm of food distributors have leased from the Mersey Docks Board the huge wool warehouse in Love Lane. When they take possession in April they will demolish part of the warehouse for the erection of a big three-storey office building with a 330-ft. frontage. The warehouse, at present stocked with rubber, will have to be cleared before operations can begin.

Mersey Shipbuilding Works.

From the Birkenhead shipyard of Messrs. Cammell, Laird and Co. the gross tonnage launched in the past year amounted to 61,257 and the horse power to 160,232, whereas in 1929 the corresponding figures were 57,929 and 41,171 respectively. In the first eight months of the year the works were well employed, but almost exclusively on contracts secured during 1929, but owing to lack of fresh orders there has been a serious falling off during the latter part of the year. For the last six months there has been practically no new work offering and the outlook for the New Year is not encouraging. The amount of repair work in the first half of the year compared favourably with the amount in the corresponding period of the previous year, but in the latter half there was a considerable reduction. This was caused no doubt by the increase in the number of ships laid up and the reluctance of shipowners to carry out any repairs beyond those vitally necessary. The total tonnage of vessels dry-docked and repaired was about 530,000, and other repairs were carried out on various steamers in Liverpool and Birkenhead docks and at Garston.

New Warrington Bridge.

Probably by the middle of this month (February) tenders will be invited for the construction of a bridge over the Mersey, near Manor Lock, connecting the Manchester Road district with Latchford. At the last meeting of the Warrington Town Council it was stated that good progress had been made with the scheme for a bridge over the Mersey at Manor Lock. It would make a desirable road to take traffic from Manchester Road over the river to Latchford. Eventually there would be a road continuing from Kingsway (off Manchester Road) to Latchford and continuing along Lousners Lane to Wilderspool Causeway. The consulting engineer of the Corporation and the Borough Surveyor have met the Manchester Ship Canal engineer and have agreed to the plans. British materials, steel, etc., will be specified.

New Dock Board Chairman.

Mr. Richard D. Holt, chairman of Messrs. Richard Holt and Co., steamship owners, has been elected chairman of the Mersey Docks and Harbour Board for the ensuing year.

Control of the River Dee.

The proposal of the Cheshire County Council and the Chester Corporation to set up a sanitary authority to control the River Dee is criticised by Mold Council. The Flintshire County Council invited the Mold Council to send a delegate to the inquiry to oppose the Cheshire application. The Chairman (Mr. T. Williams) said the setting up of a new authority meant additional expense, such as new offices and a staff. On the other hand, it would stop the pollution of the river.

Manx Dock and Harbour Works.

Amongst the dock and harbour work which is in progress at the various Manx ports are:—Peel—work is in progress on the reconstruction of the wall of the old pier; at Port St. Mary—work is being done at the head of the old pier; material is being made at the Scarlett Quarry, which the Board purchased from last year. Much flood damage has to be repaired at Laxey. The wall has to be rebuilt and the harbour bed cleared. This work will take some considerable time, but happily it is possible for ships to make use of the harbour.

More Trade for Fleetwood.

Following close upon the intimation that the South Wales trawler owners contemplate the transfer of about 30 vessels to Fleetwood, there will be a large influx of East Coast drifters for the seasonal fishing in the Irish Sea, which normally extends until September. Over 50 steam drifters from Lowestoft, Ramsgate and Great Yarmouth are expected to make Fleetwood their base this year. An average 35 East Coast drifters fished from Fleetwood during the spring and summer months of 1930, but this year the number will exceed 50 if present plans are adhered to. If the South Wales proposals are carried out the number of ships fishing from Fleetwood will probably be about 250.

White Star Loading Arrangements.

The White Star Line has had under consideration the idea of transferring the work of loading cargoes on their liners at Liverpool docks from their own permanent staff to local master porters. The change will mean that the supervision of dock work will be entrusted to master porters who will take on the squads of casual labourers needed to handle the cargo. A staff of about 50 clerks and foremen has been employed by the White Star Line on cargo loading work, and this, if the negotiations mature satisfactorily, will be taken over by the master porterage firm. The White Star Line has carried out its own cargo loading work for more than 50 years. At one time most shipping companies had their own engine works, but the contracts have since been placed with shipbuilding firms; in the same way the dock loading work is being transferred. It is not anticipated there will be much change in the method of working.

Other Ports besides London.

In connection with the investigation that is now being made of the extent to which imports for consumption in the areas served by the leading ports are shipped to London and then sent overland, thus greatly increasing the retail prices, the Liverpool organisation has received a useful contribution from a Sheffield engineering firm. They wrote to the Liverpool organisation: "It is necessary to counteract the tendency, especially abroad, to think that London is the only place in this country in which business is done. More traffic for this city could be diverted if propaganda work was undertaken by the shipping authorities." Copies of the full letter have gone forward to the Mersey Docks and Harbour Board and the Liverpool Steamship Owners' Associations.

Locomotive Shipments.

Interesting facts concerning the haulage of 65-ton locomotives for shipment abroad are mentioned by Mr. E. C. Marston, chairman of M.R.S., Ltd., Liverpool. The locomotives were required for use in Egypt, but the consignees stipulated they must arrive complete and not in parts. A multi-wheeled vehicle of special design fitted with rubber tyred wheels and weighing 34 tons was used for hauling the locomotives from Leeds to Manchester. At Stanidge the lorry successfully negotiated a hill with a gradient of one in eight at a speed of half-a-mile an hour, this part of the journey occupying five hours. The vehicle was staffed by two drivers in front and one at the tail end of the vehicle, with a telephone connecting the two cabins. At the dock side M.R.S., Ltd., found a way of dispensing with the costly crane process of shipping the locomotives. The bed of the lorry was sunk and the engine was run aboard the ship on rails. M.R.S., Ltd., claim to be the only British firm to carry railway engines in this way.

*Notes from the North—continued.***Unparalleled Progress.**

"The enterprise of the Mersey Docks and Harbour Board at Bidston Moss, and Messrs. Lever Bros. at Bromborough, will make available for industrial purposes more sites with direct water communication and provide advantages to industrialists which can be paralleled at very few places in Great Britain," states the annual report of the Liverpool organisation.

New £1,000,000 Dock.

The new £1,000,000 dock of Messrs. Lever Bros. at Bromborough admitted its first craft on January 15th, and probably this month will be opened to ocean-going steamers of 10,000 tons. One of the dock's dams still remains to be removed, and until it is taken away the Bromborough Pool stream, over which a new bridge is being built to span the stream as it passes under New Chester Road, will not be available for barge traffic. All river craft will therefore be diverted to the dock for loading and unloading purposes. When the dam is cleared away the barges will then return to the Pool stream. Recently the lock gates and the machinery operating them were inspected by Lord Leverhulme and other directors of Lever Brothers, and formally handed over to the firm by the representatives of the contractors, Messrs. Armstrong Whitworth. The dock has a deep water area of nearly 20 acres, with a depth of 33-ft. on spring tides and 25-ft. on neaps, and some 2,400-ft. of wharf frontage.

Liverpool's Disadvantage.

The high rate for railway carriage on timber traffic from Liverpool to stations in the Midlands, as compared with the rates charged to the same area from other ports, particularly those on the West Coast, has drawn a protest from the trade. Two-ton lots from Garston (according to List "V") are quoted at 15s. 5d., whilst the rate from Liverpool is 18s. 2d.; Manchester (through rates), 14s. 11d.; Sharpness Dock, 10s. 4d.; Gloucester Dock, 8s. 9d.; and Avonmouth, 11s. 10d. Thus the pence per ton mile at Liverpool at the most economical rate is dearest at 2.25d., 2.07d. Manchester, and only 1.61d. for Avonmouth.

Redress of the anomalous railway rates for timber from Liverpool and Birkenhead to the Midlands is given by the L.M.S. from the Garston docks. The new timber rates are: Birmingham Langley Green Group, Albion Group, Dudley, Great Bridge, Tipton Group, Walsall, and Short Heath.—Timber list V., 15s. 5d. per ton, station to station, in two-ton lots; timber list W., 17s. per ton, station to station, in two-ton lots. Darlaston Group, Willenhall, Bilston Group, and Wolverhampton.—Timber list V., 14s. 11d. per ton, station to station, in two-ton lots; timber list W., 16s. 5d. per ton, station to station, in two-ton lots. These figures represent a reduction of approximately 2s. 9d. per ton in list V. and 2s. 11d. per ton in list W.

A Traffic Grouse.

Very frequently Liverpool cartage and haulage firms are seriously inconvenienced due to the enforcement by the Mersey Docks and Harbour Board of the rule forbidding goods for the Irish boats being dumped on to the landing stage until they can be embarked. *Prima facie*, the Dock Board seems to have a good case because, owing to the traffic using the Princes Landing Stage, it is essential to keep all approaches to the steamers clear, in order to avoid congestion. But the Dock Board, states a Liverpool cart owner, can do a great right at the expense of only a little wrong by making some arrangement for carts to be given a fairly quick clearance. The trouble really starts at the dock, before the steamer leaves for the landing stage. If all the cargo cannot be got aboard, carts and lorries have to travel with their goods to the Liverpool landing stage and catch the boat immediately prior to sailing. A queue is formed and each vehicle must take its turn. Detention is sometimes a serious matter for the contractor and makes all the difference between doing the job economically and at a loss. Delays of two or three hours are not infrequent. If a space could be set aside near the Belfast or Dublin boats where goods could be dumped and thus enable the carts and lorries to move off, traffic congestion on the landing stage would be less pronounced and a benefit conferred on the long suffering carriers. The classes of traffic mainly concerned are green fruit and provisions, and these, of course, are perishable goods which cannot be held over for the next boats.

Mersey Inshore Channel Disappears.

Mersey Docks and Harbour Board has given notice of its intention, as circumstances permit, to remove Spencer's Spit and the North Bank buoys, which mark the west end of Spencer's Spit and the North Bank respectively. These buoys mark where the Horse Channel and the old and the new Rock channels meet. The removal of the buoys will practically close up the Hoyle Lake and may imperil the livelihood of Hoylelake fishermen, who are not permitted by the Dock Board, even if they desire, to place marks of their own. The passage from the west

end of the Hoyle Lake towards Hilbre Island has been closed by shifting sand for some years, except to boats of very small draught. These two buoys were originally placed in the old Rock Channel at the request of traders whose vessels plied between Connah's Quay, Mostyn and Liverpool. At that time there was a fair inshore channel, and vessels using the channel saved some distance and were also sheltered against strong westerly winds. During 1930 the Spencer's Spit Bank and North Banks joined the main sand-bank known as Mockbeggar Wharf and to-day the inshore channel no longer exists. Instead of having water in it, the banks dry from one to seven feet; consequently the buoys are misleading and it is necessary to remove them. Captain F. W. Mace, the marine superintendent of the Dock Board, pointed out in reply to a complaint by the Hoylelake fishermen, that the Dock Board is responsible for buoying a navigable channel, and when that channel becomes non-existent they must remove the marks, as they may mislead mariners. If the Hoylelake Council, added Captain Mace, desire to replace the Spencer's Spit buoy with another which could not be mistaken for a navigation buoy, the Dock Board would no doubt favourably consider the proposition. Fishermen of Hoylelake, New Brighton and Rock Ferry have lodged a petition with the Dock Board asking them to reconsider their decision to remove these two buoys, which are chiefly used by the fishermen for taking their bearings and not as navigation marks.

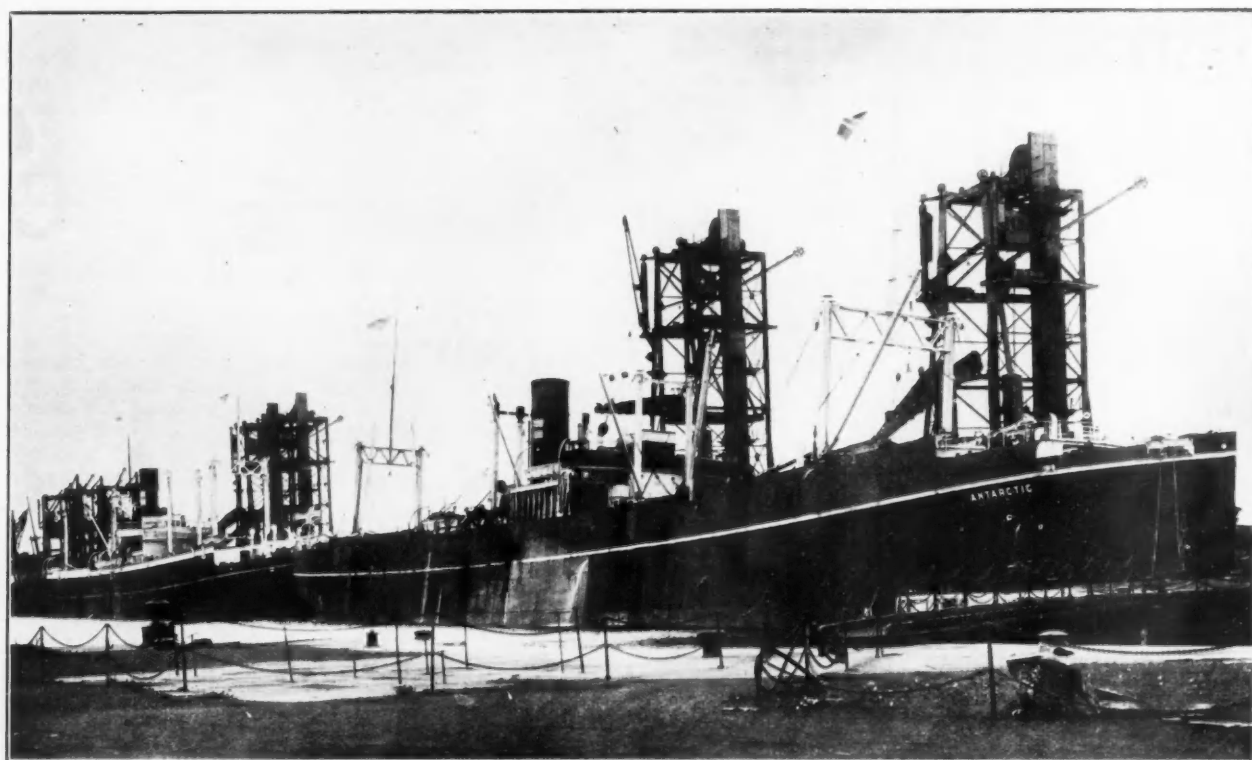
New Training Wall and Equipment for Preston.

It was stated at a meeting of Preston ratepayers called to consider the promotion of the Preston Corporation Bill that the Ribble Navigation had cost the Preston Corporation £35,000 per year since the war. The meeting had been called to endorse the Corporation's proposal to promote a Bill which will authorise the expenditure of £150,000 on extending the Ribble channel $1\frac{1}{2}$ miles, and additional equipment for the docks at Preston in accordance with the Ribble Navigation Commissioners' recommendation. The work will take seven years to complete and cost £14,000 a year, or about £100,000 in all. The £50,000 for equipment will last about five years, at the rate of £10,000 a year.

Included in the loss of £35,000 per annum on the undertaking is the payment on sinking fund account, which means that in addition to the interest on borrowed money a substantial sum has to be found towards repayment of capital. The recommendations for the extension of the training wall were made by the Ribble Commissioners in 1891, but it was not until 1896 that powers were obtained to carry into effect some of those recommendations. In 1896 the first Bill sanctioned the construction of training walls to the 12th mile on the north side and the 11th on the south side, 12 miles altogether, but the south side was not completed to the same extent as the north. In 1905, when the second Bill was presented, consent was given to the extending of the training walls up to the present limit of $14\frac{1}{2}$ miles. On each annual visit of the Ribble Committee of the undertaking since 1920, the ultimate necessity for the extensions had always been pointed out by the engineer. Although the matter has been under consideration for some years, no active steps were taken until last year, as the committee desired to defer spending the money as long as possible. The point has now been reached when they must face the problem or run the risk of losing some of the trade now coming to the port. At the present time there are shifting banks of sand which are ever changing their position, and the object is to undertake works which will fix the low water channel. Great changes are taking place in the size of the ships coming to the port. The foreign vessels are one-and-a-half times as large as they were before the war. Both the petrol tankers and ships connected with the Baltic trade, upon which the dock largely depends, are considerably larger than they were a few years ago. Hence the necessity for removing the doubtful area, or run the risk of losing trade and suffering diminishing revenue.

Councillor W. Lucas, chairman of the Ribble Committee, told the meeting that the undertaking had taken something like £35,000 per year out of the rates since the war. But it was on an entirely different basis to a limited liability company. If the undertaking was run on the same lines as the Manchester Ship Canal they would have paid a 2½ dividend on the capital outlay. In a Corporation undertaking they had to borrow the money, pay the current rate of interest on it, and were compelled to have a sinking fund. Alderman Astley Bell referred to the item of £50,000 for dock purposes. This, he said, was for the maintenance of plant and equipment. At the present time they were not able to provide the necessary plant or improvements for the quick handling of traffic, because the money provided by the previous Bill was exhausted. It had become more and more necessary during the past few years to provide at short notice equipment of various kinds for dealing with the new trades that had come to the docks. There had been an enormous increase in petrol storage and a development in the bitumen traffic, while timber had also grown and it was necessary to facilitate the unloading and despatching of this traffic.

Great Western Railway Company's South Wales Ports.



Giant Whalers loading Bunkers at Cardiff Docks prior to sailing for the Antarctic.



S.S. Elmsport loading general cargo from Newport Docks.

The Great Western Railway Company's South Wales Ports.



Aerial View of Barry Docks.

THE title of this article no doubt brings to the mind of the reader visions of vast areas of that practically indispensable commodity—coal; and there is certainly considerable justification for the almost invariable connection between the two.

The South Wales ports owe their inception to their proximity to the famous Welsh coalfield, and as the demand increased so were the docks enlarged and new docks built until, at the present time, no greater chain of ports exists in the world. Welsh coal has become a household word—its special qualities for steam raising and general power purposes are supreme, whilst the various classes of coal raised make it suitable for use in all kinds of climatic conditions and for practically every industrial purpose connected in any way with the use of fuel.

The area of the Welsh coalfield is estimated at one thousand square miles, and it reaches, in some parts, to the coast; in fact, at the western corner the boundary not only includes the actual coastline, but runs directly across the Swansea Bay, this particular portion of the coalfield being under the sea. The normal annual output is approximately 56,000,000 tons, and over 65 per cent. of this quantity is shipped through the South Wales ports.

Although coal has such an immense influence upon the trade of the ports of Cardiff, Swansea, Newport, Barry, Port Talbot, Penarth, etc., it should not be allowed entirely to overshadow other huge interests to be found in South Wales. Excellent dock accommodation, combined with unrivalled rail facilities and easily accessible fuel, have attracted to the district innumerable works, manufactories, etc., whilst the eminent suitability of the South Wales Docks for the export and importation of general merchandise from and to the Midlands and Britain generally is being recognised more and more every day. Already the exports of iron and steel, tinplates and manufactured articles, and the imports of timber, pitwood, ores, oil, foodstuffs and general goods are of large dimensions, and the very convenient geographical position of the ports in relation to the thickly populated areas of the country, particularly Birmingham and the surrounding districts, should ensure not only their present proportion of the country's imports and exports, but an ever increasing share as time goes on.

The industries already flourishing in South Wales are so numerous that it is practically impossible to make mention of them all, and even if this could be done it would be difficult to convey an idea of their magnitude by dealing with them generally. The businesses directly dependent upon coal alone run into large numbers, the chief among which are probably the importation of pitwood and mining timber and the manufacture of patent fuel.

About 2,000,000 tons of pitwood and pitprops are imported through the South Wales ports annually, most of it arriving from Norway, France, Portugal and Newfoundland, and the whole of this quantity is used in the obtaining of Welsh coal.

The manufacture of patent fuel is one of the comparatively new industries, and owes its origin to French enterprise, being first used in France in 1832. It is merely the utilisation of what was once waste material, coal dust and coal tar pitch being the two chief ingredients. Nowadays, the annual output amounts to well over a million tons, the greater portion of which is exported through the South Wales ports. The manufacture of coke and the valuable chemical by-products obtained from the coal by the coking and consequent processes is every year becoming a business of greater importance.

The second largest industry in South Wales is undoubtedly the manufacture of iron and steel articles. Hundreds of works have been established in close proximity to the ports, and the importation of pig iron, ores, etc., and the export of iron and steel manufactured articles have reached very large dimensions. Swansea has for a number of years been known as the metallurgical centre of the world, and is as synonymous with "tinplates" as Cardiff is with "coal." The total imports and exports of iron and steel of all descriptions, dealt with at the South Wales Docks during the last complete year prior to the war amounted to nearly 3½ million tons.

Milling, fishing, fruit and, in fact, practically all industries connected with the feeding of a nation have found their way to the ports of South Wales, whilst shipping has naturally established drydocking and general ship-repairing as one of the chief industries of the district.

Within the last three years oil has made such strides in South Wales that Swansea has become one of the largest oil import-

Great Western Railway Company's South Wales Ports—continued.

ing and distributing centres in the country. The Anglo-Persian Company have established at Swansea tanks, pipelines and refineries, etc., for refining crude oil brought over from Persia by a special line of tankers, and the distribution of the refined product to all parts of the country is a huge business. Cardiff has also its oil interests, large storage tanks having been installed near Penarth.

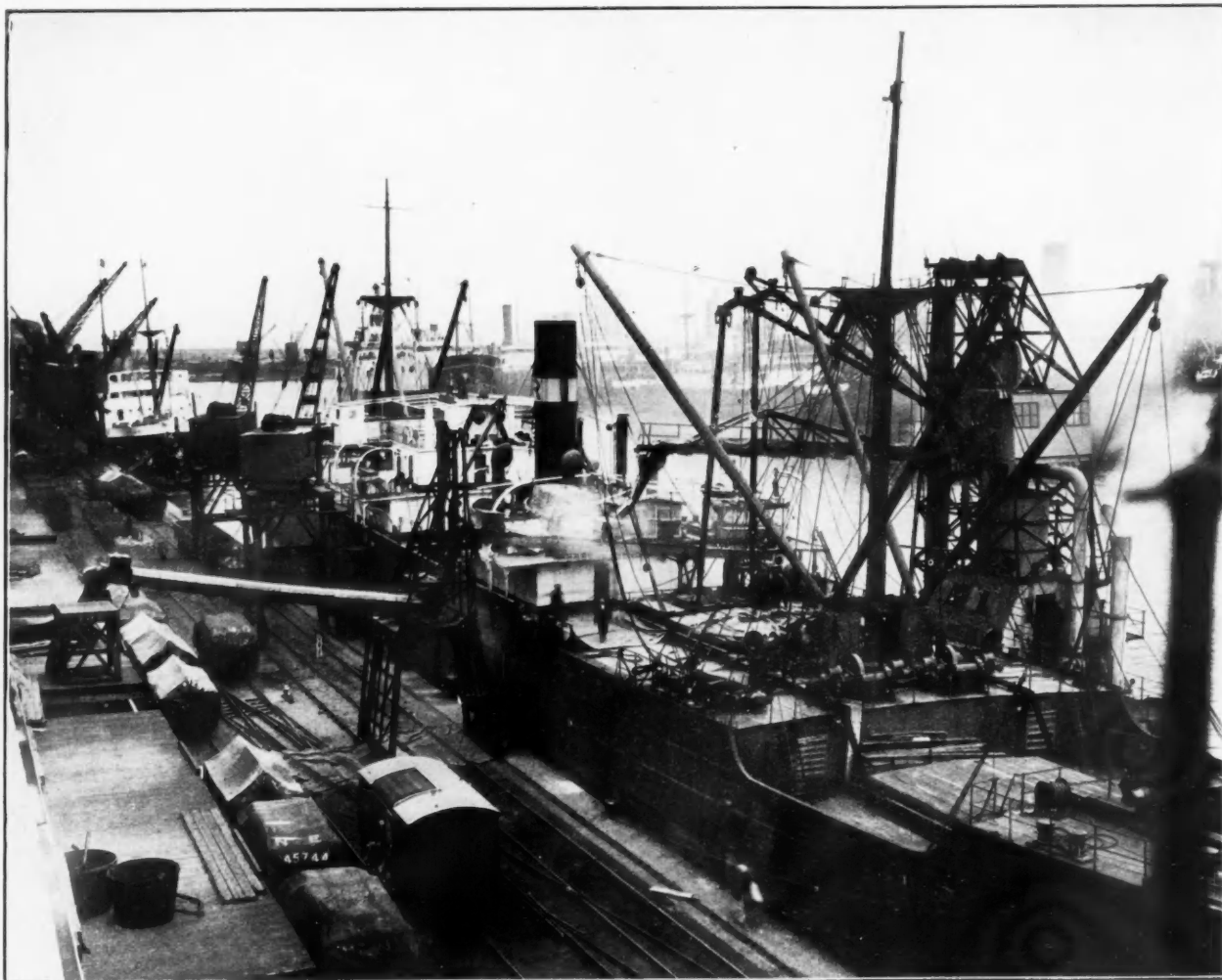
The Docks.

Practically the whole of the docks of South Wales are now owned by the Great Western Railway Company and, with their other dock property, constitute them the largest dock-owning company in the world. The total deep-water area of their docks is nearly 1,300 acres.

100 quayside cranes, and transit shed accommodation to the extent of 816,572 sq. ft. of floor space.

The North Dock, which was the first of the Swansea Docks, was opened in July, 1852. This dock comprises 11½ acres and the basin 2½ acres.

The North Dock was a very important factor in the earlier development of the port, but the construction of the newer docks has enabled the business of the port to develop on more modern lines, and in addition the increase in the size of the vessels frequenting the port has resulted in further decline in the use of the North Dock. The Great Western Company, in conjunction with the Corporation of Swansea, have therefore acquired Parliamentary powers to abandon and fill in the North Dock, the site of which will shortly be utilised for important



Cardiff Docks: Discharging Grain direct from Steamer to Shed.

Cardiff.

The history of Cardiff Docks commenced in the year 1830, when the Marquis of Bute applied for Parliamentary powers to construct what is now known as the West Dock. Previously, vessels calling at Cardiff for coal cargoes used the lower reaches of the Glamorganshire Canal, there being no dock of any description in the port. Nowadays the Bute Docks extend to 165 acres of deep water and are capable of dealing with any class of traffic. Excellent warehouse accommodation has been provided, with a total floor space of 923,906 sq. ft., and, in addition, two modern cold stores with 53,108 sq. ft. of floor space are available for the importation of meat, provisions, etc. Forty-two coal shipping appliances, of which 11 are capable of dealing with 20-ton wagons, and about 100 cranes are in regular use, and in one year alone the total imports and exports dealt with have exceeded 13½ million tons.

As a food importing port Cardiff is becoming increasingly well known; grain is dealt with in large quantities, and it has for some years held the premier position for the importation of potatoes. So far as H.M. Customs are concerned, the docks at Barry and Penarth are also included in the port of Cardiff, although these docks are actually about eight miles and one mile from that city.

Swansea Docks.

These are the most recent acquisition of the Great Western Railway, having been taken over on July 1st, 1923. The port has a deep-water area of 270 acres, and the equipment includes 20 coal hoists, 10 of which can deal with 20-ton wagons; over

street and other public improvements. The North Dock outer basin will, however, be retained in use.

The port's interests were chiefly connected with the iron and steel and the coal trades. Now, however, Swansea is well to the fore among the country's food ports. Large quantities of grain are regularly dealt with, and numerous lines of vessels make the port their destination with produce from all parts of the world. Mention has already been made of the immense oil installation at Swansea, and it is confidently expected that this will in future have a large bearing upon Swansea's prosperity.

Newport Docks.

These are situated about 12 miles up the Bristol Channel, from Cardiff, at the mouth of the River Usk, and are admirably equipped for dealing with all kinds of traffic. The deep-water area of the Alexandra Docks is approximately 123½ acres. The first of these docks was opened in the year 1875, and the last portion to be constructed was put into use as recently as 1914. The South Entrance Lock is 1,000-ft. long and 100-ft. wide.

Every class of traffic is catered for at Newport, although, of course, coal predominates in the export figures. These, however, include a large percentage of iron and steel rails and iron-work, tinplates and general merchandise, whilst the imports are made up of ores, iron and steel, billets and bars, etc., timber and deals, pitwood and mining timber, grain and flour, and general merchandise of every description.

The transit shed and cold store accommodation is excellent, and the equipment, which includes 22 coal hoists, 12 of which are capable of dealing with 20-ton wagons, and 72 quayside cranes, is adequate to meet all requirements.

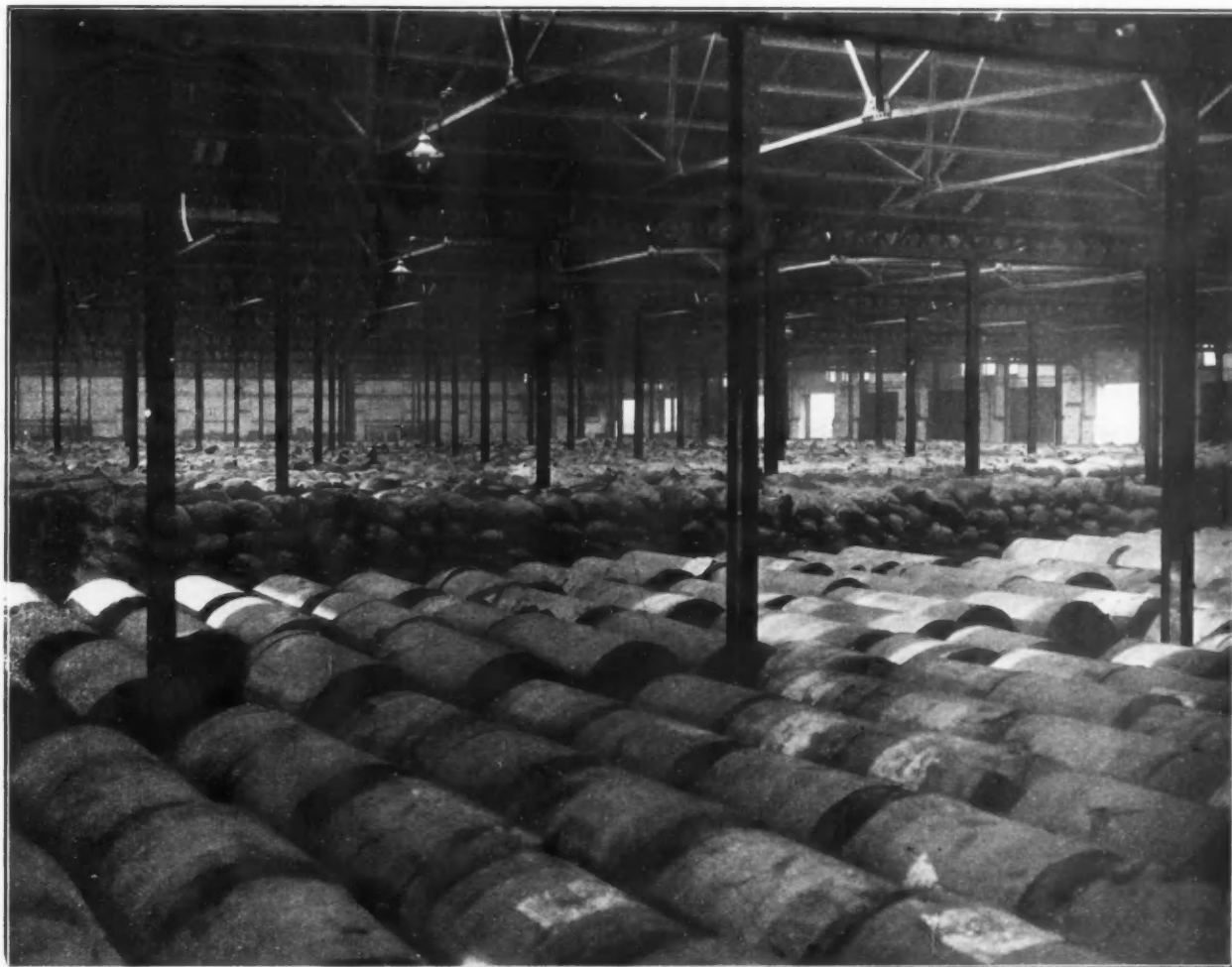
*Great Western Railway Company's South Wales Ports—continued.***Barry Docks.**

These have a deep-water area of 114 acres and were constructed, under an Act of Parliament dated 1884, essentially to cope with the increased demands for Welsh coal, which were rapidly proving too much for the accommodation provided at Cardiff. Although there are admirable facilities for dealing with the general cargo trade at Barry, among which are 55 hydraulic and steam cranes and three warehouses having a total of 252,675 sq. ft. of floor space, the docks were more particularly designed for the rapid shipment of coal, and in the peak year of 1913 no less than 11,000,000 tons of coal and coke were exported from these docks alone.

At the time of the acquisition of the docks from the various local railway companies there was considerable speculation as to their future and the manner in which they would be operated, but we venture to suggest that no critic of the amalgamation could deny that the Great Western Railway have not only kept the ports at the highest level of efficiency, but have considerably added to and improved their equipment and facilities.

Improvements at Cardiff.

A casual visitor to the Bute Docks, Cardiff, while possibly not able to judge of the extent of the improvements for which the Great Western Company are responsible, must at least be struck by the generally efficient appearance of the equipment, as



Swansea Docks: One of the spacious Warehouses fully occupied.

Penarth Dock and Harbour.

This is 81½ acres in extent, the dock being 26½ acres and the harbour 55 acres. It is equipped with 18 coal hoists, 11 cranes and 1 large transit shed. The exports are practically all coal and amount to about 4,000,000 tons annually, whilst the imports include large quantities of wood pulp and oils.

Port Talbot Docks.

Situated on the Swansea Bay some few miles from Swansea are 67 acres in extent. The inward trade of the port consists chiefly of copper, iron ores, pitwood and timber, whilst the exports are coal and coke, patent fuel, tinplates and steel, the whole amounting to approximately 2½ million tons annually. Eleven coal shipping appliances, of which six are now capable of dealing with 20-ton wagons, and 19 quayside cranes are in use on the docks, which are also possessed of two transit sheds with nearly 9,000 sq. ft. of floor space.

Other Docks and Harbours.

Other docks and harbours in South Wales belonging to the Great Western Railway Company are situated at Briton Ferry, Llanelly, Burry Port, Milford and Fishguard, the last named being well known throughout the country in connection with the company's excellent passenger and goods services to and from Ireland.

Improvements at the South Wales Ports.

Eight years have now passed since the Great Western Railway Company became the owners of the South Wales docks under the provisions of the Railways Act, 1921.

well as by the fact that new coaling and other appliances are in course of erection. As a matter of fact, apart from the actual docks themselves, little now remains of the old facilities and coal shipping appliances taken over in 1922 by the Great Western Company. From the date on which they acquired Bute Docks the railway company have been continually improving the facilities and providing new equipment where necessary.

The works actually completed during the past year at Cardiff have not been spectacular, but they have been none the less important. Chief among these completed works have been the provision of new lock gates at the East Dock, extensive repairs to the upper and lower lock gates, West Dock, and to the middle gates, Queen Alexandra Dock Lock, and considerable overhaul of coaling appliances.

Works in Progress.

Other important works, however, have actually been in hand and are still going on. Great alterations are being made on the coaling side of the Roath Dock, as the Great Western Company have started work on the renewal of the coal shipping appliances at that dock. In place of eight Lewis Hunter cranes and tips—the last of this once familiar type of appliance at Bute Docks—it is proposed to instal new appliances, the first being a belt-conveyor type of machine, the first of this type to be adopted at Cardiff, together with the necessary working roads and storage sidings. The work on this appliance is already in hand, and if this gives the satisfaction anticipated, four further belts will be installed as quickly as possible.

Progress at Swansea.

Cranage Equipment.—Six additional 3-ton electric level luffing cranes have been provided at the King's Dock to augment the equipment for the shipment of general cargo.

Great Western Railway Company's South Wales Ports—continued.

Repairs and Renewals.—In addition to the above, repairs have taken place on No. 2 west middle gate and No. 4 East inner gates of the King's Dock Lock; repairs have also been completed on the outer lock (No. 6) of the King's Dock, and the floors of Nos. 1 and 2 emergency sheds, King's Dock, have been renewed. Extensive repairs have also been completed to the Dock Roads.

Improvements at Newport.

Cranage Equipment.—The facilities for dealing with general cargo have also been considerably improved at Newport Docks. At the South Quay the facilities have been improved by the completion of a battery of 20 3-ton and 4 6-ton modern electric luffing cranes. Five hydraulic cranes from the South Quay, South Dock, and three from the East Quay, South Dock, have been transferred to the North Dock, and in place of these, five modern 3-ton electric luffing cranes have been erected at the South Quay, South Dock, and two 3-ton and one 6-ton on the East Quay, South Dock.

New Ferro-Concrete Wharf, North Dock.—The quay at the north end of the east side of the North Dock was originally of timber construction, but has now been reconstructed in ferro-concrete. Nine modern hydraulic cranes with a lifting capacity of 3-tons have been installed, and the accommodation on the adjoining quay roads has been improved.

Coal Shipping.—A movable hoist with high and low lever traversers capable of dealing with 20-ton wagons is in course of erection.

Barry.

At Barry the company have electrified the pumping plant at the west end of the Transit Shed, No. 2 Dock. The passenger pontoons at Barry Pier have been generally overhauled.

New Supply of Soft Fresh Water.—From October 1st, 1930, a new supply of soft fresh water was brought into use at the Barry Docks by arrangement with the Barry Urban District Council and Taf Fechan Water Board, which Board has control of a large area of water of the highest purity.

Port Talbot.

Extensive repairs have been completed to the South Break-water.

Penarth.

The company have provided a pair of new middle gates for the Penarth Dock Lock.

This brief recital of the work carried out and in hand is the best possible assurance to shipowners, merchants, manufacturers and all who use the South Wales ports that the Great Western Railway are not slackening their efforts to maintain the highest possible standard of efficiency at their docks. The existing facilities are undoubtedly considerably in excess of the immediate requirements of trade, but the expenditure which has been authorised on the additional works enumerated above is a testimony to the faith which the company has in the future of the trade at the South Wales ports.

Aden Port Trust.

The returns for the month of November, 1930, of shipping using the port are as follows:—

	No.	Tonnage.
Merchant Vessels over 200 tons ...	120	479,252
" " under 200 tons ...	11	1,735
Government Vessels ...	7	22,788
Dhows ...	109	3,639
PERIM.		
Merchant Vessels over 200 tons ...	21	69,440

The total value of imports, excluding Government stores, was Rs.55,13,000, as compared with Rs.71,44,000 for November, 1929, and of exports Rs.36,19,000, as compared with Rs.54,17,000.

The total value of both imports and exports together was Rs.91,32,000, as compared with Rs.125,61,000 for the corresponding month of 1929.

Imports during the month were above those for November, 1929, in the case of coffee, grain, pulse and flour, gums and resins, piece goods (white), twist and yarn, and tobacco

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal ...	Tons	6,493	1,26,481	0	0
Coffee ...	Cwts.	7,890	2,55,185	6,732	3,21,492
Grain, Pulse and Flour ...	"	42,123	2,79,021	28,911	1,92,205
Gums and Resins ...	"	4,579	90,766	3,471	72,503
Hardware ...	"	0	8,081	0	14,522
Hides, raw ...	No.	3,789	8,875	5,718	15,797
Oil, Fuel ...	Tons	31,769	9,53,170	0	0
" Kerosene ...	Gls.	72,096	53,242	3,108	2,336
" Petrol ...	"	43,808	54,760	3,848	4,610
Salt ...	Tons	0	0	19,950	2,01,600
Seeds ...	Cwts.	6,545	81,043	2,602	34,388
Skins, raw ...	No.	304,485	2,31,892	319,175	3,51,638
Sugar ...	Cwts.	22,398	1,43,828	17,103	1,16,387
Textiles—					
Piece Goods, Grey ...	Yds.	4,402,500	8,04,802	3,503,460	6,27,672
" " White ...	"	584,378	1,55,502	322,217	88,637
" " Printed or Dyed ...	"	568,813	1,48,005	904,935	2,77,398
Twist and Yarn ...	Lbs.	624,098	3,55,950	409,993	2,67,816
Tobacco, Unmanufactured ...	"	780,528	1,45,868	493,248	1,28,128
" Manufactured ...	"	51,181	44,006	16,212	15,991
Other Articles ...	No. of Pkges.	73,507	10,70,815	26,011	5,73,040
Treasure, Private ...	"	0	5,00,680	0	3,12,530
Total ...	—	—	55,12,962	—	36,18,690

The number of merchant vessels over 200 tons that used the port in November, 1930, was 120, as compared with 121 in the corresponding month of 1929, and the total tonnage was 479,000, as compared with 507,000.

Excluding coal, salt, fuel oil and military and naval stores and transhipment cargo, the total tonnage of imports in the month was 10,900, and of exports 6,100, as compared with 9,000 and 7,100 respectively for the corresponding month of 1929.

(unmanufactured); and below in the case of hardware, hides (raw), seeds, skins (raw), sugar, piece goods (grey, printed or dyed), tobacco (manufactured) and treasure (private).

Exports were above those for November, 1929, in the case of coffee, gums and resins, seeds, piece goods (printed or dyed); and below in the case of grain, pulse and flour, hardware, hides (raw), skins (raw), sugar, piece goods (grey, white), twist and yarn, tobacco (unmanufactured and manufactured) and treasure (private).

Tilbury Contracting & Dredging Co Ltd

THE Company is in the unique position of having had about

FIFTY YEARS

DREDGING EXPERIENCE

of all descriptions for Government Departments, Public Bodies, Railway Companies, Port Authorities and Harbour Boards, etc., in the British Isles, and for Foreign Governments in Europe and various parts of the World.

The Company has during the course of its operations

DREDGED AND REMOVED

UPWARDS OF

ONE HUNDRED MILLION TONS of material of all descriptions varying from soft mud silt to hard granite rock.

Enquiries are invited from Engineers and others in connexion with Dredging Schemes in any part of the World.

Established 1884



Queen Anne's Chambers, Westminster, London, S.W.1

WHEN REPLYING PLEASE MENTION "THE DOCK AND HARBOUR AUTHORITY."

Congestion of Traffic at Ports.

By Walter E. Tapper (Associate Member of the Institute of Transport).

(Concluded from page 91).

General merchandise for export from this country does not, of itself, figure largely in the problem of congestion. This traffic is mainly shipped by liners and the chief problem in ordinary circumstances is to find room in the transit sheds for goods sent down in advance to await shipment. The steamers shipping the general merchandise usually bring import cargo which has first to be discharged. If ample shed space is available, room can often be found for the export cargo without interfering with the working of the import cargo, but if the space is limited, the work is liable to be hampered by the export cargo being in the way of the import cargo and *vice versa*. The railway companies allow extra time for their wagons to be kept underload with export cargo whilst awaiting shipment. This concession is valuable as it often saves extra handling and demand upon the shed space.

"The Custom of the Port" makes a contribution to the problems of congestion. Methods of working, which are a relic of former days, when dispatch and economic handling were less important than in the present strenuous times, are still prevalent even at some of the principal ports. At certain ports the discharge of a cargo of, say, 6,000 tons of grain is spread over ten days, although mechanical appliances are available which would enable the discharge to be completed comfortably in about half that time. It is also insisted that by custom certain classes of traffic must be worked in an old-fashioned way which involves an undue demand upon accommodation, to say nothing of extra labour costs, and which is the reverse of expeditious. In times of pressure these old customs and practices tell against a port and hasten a state of congestion. If the money value in the loss of time to ships and in the provision of additional accommodation thereby involved in the course of a year could be calculated, the sum would be a very substantial one. If cargo could always be discharged as quickly as the ship can deliver—and this is equally important) and as fast as the cargoes can conveniently be received on the quays—there would be a great economic saving all round. It is high time that many of these antiquated customs were abandoned.

At some of the smaller ports it may happen that some vessels are neaped and have to wait outside for spring tides, with the consequence that, when they are able to get into dock, there is a heavier demand upon the resources of the port, especially if several vessels are so delayed, than if it were possible for them to proceed direct into berth and discharge at the end of the voyages.

One of the most trying situations in the working of dock traffic is that of the resumption of work after a stoppage of labour. A state of congestion in some degree, according to the length and extent of the stoppage, is almost inevitable. Any interruption of work, even if only of short duration, soon causes an accumulation of traffic and a concentrated effort is needed to restore as quickly as possible the normal flow of trade. Unless the situation is well managed and the goodwill and co-operation secured of all directly concerned, the effects of a stoppage may be felt for a considerable time, whilst the prestige of the port, already prejudiced, may suffer still further. These occasions afford the greatest practical test of good management and efficiency of a port.

Almost equally serious are the effects of labour stoppages in other branches of transport. A stoppage of work by railwaymen, carters, or lightermen is immediately felt at the docks. The work at the docks is meanwhile proceeding but the traffic, or a substantial part of it, is not being removed upon landing. Quays and sheds become blocked with cargo, work is hampered and congestion and dislocation ensue.

Labour stoppages at works and factories taking imported raw materials may also cause traffic to be held up at the docks instead of being dispatched on arrival.

In these cases the objective of all concerned must be to get back to the normal position as speedily as possible when work is resumed. It may be stated tritely that a week's congestion takes a month to clear up.

The next step is to examine the measures to be taken to avoid the difficulties of congestion. The golden rule at docks, as with other transport undertakings, is to "keep traffic moving." Once stagnation sets in, congestion speedily follows.

A port is the terminal for ships and the concentration point where traffic is interchanged between ships and other forms of transport. Inward traffic converges upon a port and outward traffic radiates from it, so that besides its own efficiency a port is dependent upon the efficiency with which the several transport agencies perform their functions. Not only must facilities be

provided at docks for sea-going ships but also for all other forms of transport. Although the primary functions of a port are confined to the transfer of traffic it must always be remembered that its "sphere of influence" is a very extended one and the ultimate consequence of its defects and shortcomings are widespread and may be detrimental to a great diversity of interests.

Quays and transit sheds are solely for the temporary reception of traffic in the course of transit. They must always strictly be reserved for that purpose. Goods which do not go into immediate consumption on arrival should be removed for storage elsewhere. By all means let such goods remain at the docks if so desired, but at some place where there is no risk of their interfering with the current movement of other traffic. Therefore warehouses, as distinct from transit sheds, must figure prominently at a port.

With the port authority lies the primary responsibility of providing the accommodation and equipment necessary to conduct satisfactorily the trade of a port and of taking all reasonable steps so that congestion shall not arise from a lack of proper facilities, either as regards the port as a whole or any separate branch of its trade. No port authority can, however, be expected to foresee or provide for every emergency and for every exceptional circumstance, but must necessarily plan its accommodation upon past experience and an intelligent anticipation of the requirements of trade in the future.

No hard and fast rules can be laid down when deciding upon the extent and quality of the accommodation to be provided. In the course of a year the trade at every port fluctuates over a very wide range. There are greater fluctuations in traffic at docks than in the traffic handled by the other transport agencies. It follows, therefore, that a port authority cannot be assured of anything like regular and continuous user of all its accommodation. Indeed the disparity between the actual and potential user of dock accommodation is startling. It was recently stated that at five large docks, which are regarded as busy docks, on the average—for every 100 days the berths were occupied—they were vacant for 83 days, and that for every 100 hours a berth was occupied by vessels the work of discharging and loading proceeded only on an average for 23 hours.*

The average volume of traffic cannot be taken as a guide for determining the needful accommodation. It must be somewhere near the peak demand if the port is to conduct its business without hitch during busy periods. On the other hand, docks and their equipment are very costly as regards construction and maintenance and the desideratum of every port authority is to obtain at any rate a reasonable user of the major part of its undertaking. The greater the vacant accommodation the greater is the burden thrown upon the trade of the port in having to find the revenue to bear the cost of interest, sinking fund, maintenance, and other standing charges on the idle part of the undertaking. Port authorities may, therefore, be reluctant to embark upon new works before they can see at least a moderate prospect of some return upon their outlay.

A situation of this sort arises at ports which may have a steadily increasing trade. The existing accommodation becomes insufficient in the course of time; vexatious delays and congestion occur and demands are made by shipowners and traders for more accommodation. To satisfy these demands may mean the construction of a new dock or a large extension which must be in excess of the immediate needs and involve heavy capital expenditure and standing charges. With a normal increase in trade it may be some years before a proper financial return can be hoped for. It is always difficult to decide in these circumstances when is the proper time to embark upon a scheme of dock extension. The sufferers from insufficient accommodation are clamant for new works to be undertaken but are not always willing to shoulder their share of the burden of extra standing charges thereby entailed. The authority on the other hand, with the knowledge of its financial obligations, may be hesitant to proceed with new works and may find itself at variance with the dock users.

It may be claimed, however, that the port authorities of this country are alive to the need of providing adequate dock facilities and it is interesting to note that, in the evidence given recently before the Royal Commission on Transport on behalf of the Dock and Harbour Authorities Association, it

* Mr. T. B. Hare, "Dock Capacity," "The Journal of The Institute of Transport," June, 1930, page 357.

Congestion of Traffic at Ports—continued.

was stated that at the ports of London, Liverpool, Manchester, Glasgow, Belfast and Bristol, no less than £28,000,000 had been expended since 1919 on new works and on the modernisation of equipment.* These figures are remarkable having regard to the shrinkage in our overseas imports and exports and the decline of our coasting trade. At other docks in the country, including the railway companies' docks, there has also been large expenditure on new works and particularly in improving equipment, although, with the exception of Southampton where the Southern Railway Company is carrying out a very large extension of its dock system, the expenditure has not been on the same profuse scale as at the first-mentioned ports.

Much of this expenditure has been incurred to meet changed conditions since the war and to ensure that the ports are equipped in the most efficient manner so that delay and congestion may be avoided as far as can reasonably be foreseen.

It is significant to note that many of our leading ports show increases in the nett register tonnage of vessels in the foreign trade compared with pre-war, despite the fall in weight of the various imports and exports. This is due to the growth in the number and size of ocean-going vessels and to the practice of loading cargo in one vessel for a number of ports. The ship's tonnage is recorded at each port at which a vessel calls to discharge; thus a vessel calling at four ports has her tonnage recorded four times, for what, in effect, is one voyage for one full cargo. The official statistics relating to the tonnage of vessels are, taken by themselves, apt to be misleading without the corresponding statistics relating to cargoes. But the significance from the standpoint of the port authorities is that the demand for berthing accommodation for vessels is in a greater ratio than quay or shed space for goods, although it must be borne in mind that the part cargoes of four steamers, each discharging a quarter of her cargo at a port, make—apart from berthing space—a relatively heavier demand upon the equipment of a port than one steamer discharging an equal weight as one full cargo.

The growth in the size of vessels has rendered more or less obsolete some of the older parts of our ports for certain trades. A detailed comparison of pre-war and present trade makes an interesting study to those engaged in dock management and reveals that radical changes have taken place in the sources of origin of some of our principal imports, the types of vessels employed, the character of traffics and the methods of handling, as well as a complete alteration in labour conditions. All these changes have necessitated a corresponding evolution in our dock systems, without which many of our ports would be unable to deal expeditiously and satisfactorily with the present volume of traffic.

The nature and quality of the equipment necessary to ensure the rapid movement of traffic through our ports must be considered. Ample quay and shed space is a prime necessity, and at modern docks this is provided. Many of the older docks, however, are not so fortunate in this respect. The docks were constructed perhaps 50 or 100 years ago, or even longer, when trading conditions differed vastly from those now prevailing. Such docks are often situated in the heart of the town where space is now strictly limited. These docks are still popular for the coastwise and short sea Continental trades where the vessels engaged are relatively small, as traffic can be landed near the importer's premises and to the town warehouses. These vessels often bring very mixed cargoes and arrivals may follow closely one after another. Frequently the quays are without railway lines, or, where these lines exist, they are, owing to physical conditions, very restricted, and the layout is often below the modern standard. The handling operations are cramped and it is often a problem under these conditions to get ships away and goods removed with the desired dispatch. Two storey transit sheds double the space under cover and are an advantage in these circumstances. Such sheds are a recognised feature of our modern docks. In cases where there is a regular demand for warehousing a third storey can be added with advantage and be utilised for storage purposes with the minimum of movement from the ship's side. Cranes should be numerous and of a type suitable for the trade of the port. Railway lines should, where practicable, be on both sides of the shed so that traffic can be worked direct from the ship to trucks and also from the sheds to trucks at the rear. The practice of transferring general cargo direct from the ship to trucks has grown since the war. It saves expense by avoiding the landing into the sheds and reloading, and therefore lessens the demand upon the shed space, so that this method of dispatch is to be encouraged. In the case of mixed cargoes, appropriate stowage is important if this method is to prove entirely satisfactory.

There should be suitable connections between the shed lines and running roads so that the empty and full trucks can be shunted without interfering with and delaying work at adjacent berths.

There have been during recent years noteworthy developments in the use of ancillary mechanical appliances for the handling of goods at docks. Electric and petrol trucks have become very popular for moving traffic from the ship's side to its resting place at the docks and *vice versa*. Elevators, conveyors, hoists and pilers of various designs are being more generally employed and enable fuller use to be made of the quay side accommodation than is possible by man-handling processes. By the combination of elevators and conveyor bands, grain cargoes are taken straight from the ship's hold to silo granaries in the rear. Elevators and conveyors are also proving successful for discharging package goods when the packages are uniform in size and shape. Such traffic as bananas and carcasses of mutton are handled very rapidly by this means, as also are chests of tea and other case goods which arrive in large quantities in one ship. These appliances make for greater mobility of traffic at the docks and for efficiency, so that apart from economic considerations, they may be regarded as safeguards against congestion. The extent to which it is practicable to utilise mechanical appliances must, of course, be determined by local circumstances. Obviously there must be a sufficient volume of suitable traffic to keep them in fairly constant employment.

Many docks were constructed at a time when the railways still enjoyed a monopoly of land-borne traffic between the ports and the interior and provision was not always made in the layout for dealing with the large quantities of traffic now being forwarded by road vehicles. As a result it has been necessary to spend money in providing suitable facilities for road vehicles and for improving and extending the roads within the docks.

A reference must be made to land communications with the docks, which, although outside the jurisdiction of the port authority, are of great importance to the movement of traffic.

It is very desirable that there should be good connections between the branch railways serving the docks and the main lines, so that railway traffic can pass with freedom to and from the docks. If railway traffic has to pass through a bottle neck, delays are liable to be experienced. Unfortunately, these bottle necks exist at a number of ports and, owing to the physical conditions, the situation cannot be remedied except at prohibitive cost. In times of pressure, traffic may be subject to delay and work at the docks held up for a time waiting for empty wagons to be worked down. Any port which is not faced with this difficulty is in a happy position.

Equally important is good road access to the docks. The rapid extension of road transport from the haulage of merely town traffic to a great agency for the conveyance of inland traffic has been one of the most remarkable features of post-war progress. For years past the inadequacy of the roads leading to the London Docks has been notorious, and the continuous delays to road vehicles have given rise to constant and vociferous complaints. The docks themselves are well laid out for dealing with road-borne traffic, but the congestion in the roads outside seriously hinders the speedy removal of goods from the docks. Some belated steps are now being taken partially to remedy this disability.*

At Liverpool it has been found necessary to construct a new arterial road at a cost of over £3,000,000 to connect that port with East Lancashire and also to construct a tunnel under the Mersey in order to cope with the ever increasing road traffic. At other ports money has been spent in improving road access to the docks.

It is important that due care should be taken when landing and stacking cargoes in the transit sheds to keep the different consignments separate and according to marks, with proper alleyways between the different stacks, so that each lot is readily accessible at any time for removal. If goods are merely dumped indiscriminately in the sheds—as may sometimes be the tendency when one party undertakes the landing of goods and other parties are responsible for their removal—there is bound to be some confusion and the various consignees are apt to hesitate in sending for their goods until they feel sure that their hauliers can be certain of obtaining easy delivery. This may often be a forerunner of congestion. Such a state of affairs is less likely to occur when the landing and delivery are performed by one party, as self-interest is a sufficient incentive to place each consignment in an accessible position.

The stowage of mixed cargoes at foreign ports has been a subject of criticism, as often too little attention is paid on the other side to the way in which goods will eventually come out of the ship. If goods are stowed in a convenient way for landing in separate consignments there is a saving of time and expense at the discharging port, especially when cargo has to be delivered partly to barges, partly to railway trucks and partly landed to shed. Barges must be alongside ready to receive as soon as the goods become available; if part only of the consignment is then accessible the barges have to wait for the remainder—or, alternately, depart partly loaded, while other barges have to be sent for the balance.

* Royal Commission on Transport, "Minutes of Evidence," Part XIII., page 774.

* Royal Commission on Transport, "Minutes of Evidence," Part XIII., Evidence of Mr. D. J. Owen, pages 774, 779 and 780.

Congestion of Traffic at Ports—continued.

On the administrative side a port authority has important responsibilities in the matter of taking precautions against congestion. Its by-laws and regulations should be so framed as to ensure the speedy clearance of goods from the quays and transit sheds after discharge, and must always be enforced irrespective of the state of trade. If laxity is countenanced in the removal during slack times, it is next to impossible to secure a proper observance of the regulations during busy periods when space is at a premium.

It is the duty of the docks superintendent to keep himself acquainted as far ahead as possible of expected traffic and the position of vessels on passage, so as to be in a position to allocate the most suitable berth to each class of cargo.

At ports where the labourage operations are undertaken by private firms, the docks superintendent should endeavour to secure as far as practicable the co-operation of the various interested parties in the expeditious movement of traffic from the docks and to ensure the maximum use of the facilities. A great deal can be done by the exercise of tact and particularly in relations with the railway companies and road and water carriers. Much depends on the way in which these transport agencies perform their functions, and the docks superintendent should be in constant touch with them. It is essential that he should keep the railway companies closely informed of prospective traffic so that they can arrange for a proper supply of railway wagons.

There is much to commend the practice of giving appropriated berths to liners trading at frequent and regular intervals, where circumstances allow. It tends to ensure the co-operation of the shipowners in their efficient user, as they, on their side, have an incentive to see that the berth is available to meet their requirements, and that the quay and shed space is kept free for the reception of incoming traffic. Appropriated berths can, however, only be given when the regularity and volume of traffic ensure constant use.

It should be the policy of port authorities to encourage delivery overside to lighters and barges wherever local conditions make this feasible. This is the cheapest method of taking cargo from import and to export vessels and at the same time relieves the quays of traffic. Both sides of the vessel can be used simultaneously. Once goods are delivered overside there is no risk of their causing congestion. Many leading ports are situated on the estuaries of navigable waterways, e.g., Thames, Mersey, Humber, Severn, Avon, etc., and there barging is a prominent feature. London stands in a unique position in this country with regard to the very large proportion of dock traffic delivered overside, and the fact that the Thames passes through the city is one of the greatest assets to that port. Custom and special privileges, coupled with natural advantages, have caused overside delivery at London to be the principal method of dealing with overseas traffic and certain of the docks have been constructed especially to expedite overside delivery. At Hull also the "free water clause" has caused barging to become a popular practice, and at Liverpool, Bristol and other ports this is very common. The use of canals for inland transport has unfortunately declined since the war, but for importers and exporters having waterside premises within a port or within a short distance barging has proved the most economical and effective way of conveying dock traffic. Manufacturers establishing new works within a port or adjacent thereto usually give preference to a site having water access. There is no better way than barging for the clearance of goods from docks.

One further word may be added on another aspect of labour conditions. It is now recognised at every port in this country that eight hours is as long as a man shall work at the ordinary rate of pay and that for any time worked in excess of those hours he shall receive extra remuneration. No one will be disposed to quibble as to the reasonableness of an eight-hour day, but the question does arise for serious consideration whether the best use is being made of resources by limiting those hours from 8 a.m. to 5 p.m. This period of the 24 hours is, with certain exceptions, solely and religiously dedicated to ordinary work, and any work performed outside those hours has to be paid for at greatly enhanced rates so as to be a deterrent. It is melancholy to reflect that in conducting our overseas business in the face of severe international competition the costly equipment in connection with the major operations at our docks is idle for sixteen hours out of the twenty-four, and that normally only forty-four hours' work can be obtained out of the working week of 144 hours. Our competitors on the Continent have managed things much better and have contrived to get a much longer and more continuous user of their facilities. There the shift system at ports is in vogue, with the result that ships receive the quickest possible dispatch and, in spite of the huge volume of trade, congestion at such ports as Rotterdam, Antwerp and Hamburg is practically unknown. Those ports are assured of a maximum user of their equipment, and this, coupled with the special feature of overside delivery, is one of the reasons why those ports are so popular with shipowners both on account of prompt dispatch and low costs.

One is only too well aware that a close comparison of the Continental ports with British ports fails in many respects, but one of the greatest disadvantages suffered in this country is the inelasticity of the labour system and the restrictions in regard to employment. It is impossible to estimate the cost that has been incurred to adapt our ports to accommodate trade under the existing labour conditions in order to ensure a smooth working of traffic and to dispel the nightmare of congestion. Some system of shift working, perhaps in a modified form or one which would enable work to proceed without having to wait until the hands of the clock reach 8 a.m. each day, would undoubtedly conduce to greater efficiency and a more intensive user of docks. It is, however, realised that to carry out such a radical change and break with tradition must involve reorganisation of a far-reaching character, which would not be limited merely to docks, but would also affect other forms of transport and industrial undertakings. During times of pressure the inflexibility of our labourage system is not only costly but also a positive handicap.

An instance has recently come to the writer's notice illustrating the disparity between British and Continental ports. A steamer arrived at Hamburg on Friday at 4 p.m. with a part cargo of 2,000 tons of ore. The discharge was commenced forthwith and completed at 6 a.m. on the following day. The steamer had therefore finished her discharge at Hamburg before work would have commenced at a British port, where the discharge at the same rate per working hour would have occupied until the following Tuesday unless inordinate expenses for overtime had been incurred.

Lest the reference to this aspect of dock problems be regarded as a digression into the arena of controversial topics, it may be emphasised that the system of dock labour is correlated to the problem of dock capacity, which in its turn is so closely allied to that of congestion.

In conclusion it may be stated that inefficiency begets delay, and delays culminate in congestion—a succession of evils which it is the duty of all concerned to circumvent. The first essential safeguards against congestion are proper facilities and good organisation, and without these efficiency cannot be achieved. Good organisation is the security that the resources of a port are being utilised to the best advantage. The ability to visualise and cope with the difficulties attendant upon gluts of traffic and other contingencies inherent to dock enterprise is among the first virtues demanded from all those associated with the movement of dock traffic.

The Port of Bremen.

Sea Traffic during November, 1930.

Seven hundred and nine thousand eight hundred and ninety-nine net registered tons arrived in November in Bremen shipping traffic, or 133,637 net registered tons less than October. This is also a decrease in comparison with November of the previous year by 27,861 net registered tons. During the period January to November of this year 8,375,178 net registered tons arrived, against 8,292,650 in the same period of the previous year. There is thus an increase in traffic of 82,528 net registered tons, or 1 per cent.

Seaborne goods traffic of the five most important Weser ports experienced a considerable decrease during November. Imports and exports together amounted to only 543,000 tons, and were thus 73,000 tons, or 12 per cent., less than in the previous month and 120,500 tons, or 18 per cent., less than November, 1929. Imports, which came to 367,000 tons, decreased 53,900 tons from last month's figures and were 97,000 tons less than November, 1929. While arrivals of cotton during the first months of the new season exceeded those of the previous year, they decreased considerably in November. In addition timber and ore transports were weaker. In November, 1929, 48,000 tons of timber arrived, against only 20,700 tons in the month under review. Ore decreased from 32,000 tons to 5,600 tons. Exports were scarcely 176,000 tons, against 195,000 tons in October and 199,500 tons in November, 1929. The decrease was spread over all goods.

During the past eleven months a total of 5,927,000 tons was imported and exported, against 6,419,700 tons in the same period of 1929. Quantity of goods according to this decreased by almost 500,000 tons, or 8 per cent. Since the end of October there has therefore been a considerable deterioration in traffic by 1½ per cent. So far as can be foreseen, this will increase, as December, 1929, showed exceptionally high figures. The decrease is only in imports. These amounted to 3,834,500 tons, against 4,348,800 tons in the previous year, or 514,500 tons less, equal to 12 per cent. More than half of this is due to lower import of grain. Exports with 2,092,700 tons show a negligible increase of 21,800 tons.

North-East Coast Notes.

Reduction in Tyne Revenue.

Meeting of the Tyne Commissioners.

THE Tyne Commissioners commenced the year with a further consideration of two separate but allied schemes. The greater was the laying-out of Jarrow Slake with docks, wharves, and coaling staiths, and the second—one of great importance—the question of taking over Tyne Dock from the London and North-Eastern Railway Company. Already the engineers have made soundings in the Slake, and the result of these and various other facts were placed before the Commissioners at the meeting, which was in private. Eventually the discussion of these matters was deferred.

Tyne Coal Trade during 1930.

The Tyne coal trade finished 1930 on a good note, and although at the time of writing the official figures are not to hand, there is no doubt but that the last month of the year helped to make up for some of the shortcomings of the previous months. Indeed, the first week of December was the best in respect of shipments since March, and on December 15th the loadings from the Tyne totalled 100,000 tons. During the eleven months ended November 30th there were shipped from the Tyne 15,761,045 tons of coal and coke, as against 18,169,975 tons and 18,565,090 tons in the corresponding periods of 1929 and 1913 respectively. These figures showed decreases of 13.26 and 15.10 per cent. compared with the two years named.

Mr. R. S. Dalgliesh, who presented the report at the meeting of the Tyne Improvement Commission, said that the Commissioners had been complimented on the expeditious way they had coaled the big liner "America," enabling her to make her journey according to schedule. The loading was by the anti-coal breaking devices, and showed how the facilities of the port were up-to-date.

Reduction in Revenue.

Mr. Francis Priestman, the Chairman of the Finance Committee, mentioned that the Committee had decided to continue to borrow money at $4\frac{1}{2}$ per cent, and the results were satisfactory, showing the good financial standing the undertaking had. They had, however, suffered some reduction in revenue due to the depression in trade, but some of the reduction was a result of the concessions made to the dues payers.

Successful Negotiations.

The Chairman (Mr. H. P. Everett) referred to the successful conclusion of negotiations with the London and North-Eastern Railway Company, which had been going on since 1928, regarding certain payments, and said they were indebted to their secretary (Mr. A. Blacklock) that the arrangements were retrospective, and would thereby save the Commission £2,500.

Idle Tonnage.

The most unsatisfactory report submitted was that in respect to idle tonnage, for this showed that at the end of November there were 92 vessels of 166,943 tons laid up; this was an increase of one vessel of 2,900 tons compared with October, and an increase of 72 vessels of 144,502 net registered tons compared with the figures for 1929. Some consolation may be gained from the fact that in April last there were 105 vessels idle in the river, the net tonnage being 189,543 tons.

Reverting for a moment to the trade return, it was shown that there were some increases in the shipment of merchandise for the eleven months, that at Northumberland Dock being 18.97 per cent. up on the previous year and at Albert Edward Dock 3.49 per cent. up on the previous year, but the coal and coke shipments from each place showed diminution: at Northumberland Dock 32.55 per cent., at Albert Edward Dock 19.35 per cent., and Whitehall Point Staiths 13 per cent. Bunker coal shipments were down by 85,886 tons in the eleven months of 1930 at 705,343 tons, but oil fuel bunkers were up by 10,857 tons at 65,446 tons.

Quick Work at Tyne Dock.

A case of excellent dispatch at Tyne Dock has been recently reported. The motor vessel "Neptunian" was chartered to load from 9 a.m. She commenced loading at 10 a.m. and finished 49 hours later, in which time she had shipped 7,965 tons of coals. The vessel has three decks.

Reconstruction of Gateshead Quay.

It is interesting to note that Gateshead Town Council have been notified by the Unemployment Grants Committee that they

Trade at Blyth and on the Wear.

are prepared to assist in the work of reconstruction of Gateshead Quay wall, but that the grant would be limited to a maximum of £9,570. The work of rebuilding the quay is proceeding steadily, and the Tyne-Tees Steam Shipping Company will, it is expected, soon be again in occupation of the quay.

Trade at Blyth.

Blyth Harbour Commission were unable in 1930 to maintain their record shipments of 1929, and the figures for the last eleven months of 1930 showed a decrease of 15 per cent. on the 1929 figures. Official figures of the coal exports are as follow: November, 1930, 385,927 tons; November, 1929, 482,598 tons; November, 1913, 371,796 tons. Total for eleven months: 1930, 4,381,489 tons; 1929, 5,128,063 tons; 1913, 4,349,875 tons.

The 1930 figures showed an increase of 1 per cent. on the 1913 figures.

Timber exports showed a slight decrease on 1929 and a big drop when compared with 1913. The figures were: 1930, 20,370 tons; 1929, 25,145 tons; 1913, 40,311 tons. Pleasing features of the year's trade were the increase in cement, iron and steel and the miscellaneous traffic imports. The 1929 figure for cement imports was 7,061 tons, last year's being 7,510 tons; while last year's figure for iron and steel was 1,603 tons, as against 1,000 tons in 1929. Miscellaneous traffic imports were 1,385 tons last year, as against 121 tons in 1929.

Repair of Two Projecting Groynes.

The River Wear Commissioners, at their last meeting, decided to repair two projecting groynes in the river, towards the cost of which the Unemployment Grants Committee will contribute. The Commissioners also accepted the tenders of Messrs. J. Crown and Son, shipbuilders, Sunderland, for the building of two saddleback hoppers to be used in connection with the work for the protection of the Commissioners' property from sea invasion; towards the cost the Unemployment Grants Committee will also contribute.

Trade Returns for the Wear.

It is very satisfactory to note that the latest trade return for the Wear, that is, up to the end of November last, shows considerable increases in the general trade for the eleven months when compared with the corresponding period of 1929. The imports, for instance, rose from 346,493 tons in 1929 to 359,807 tons last year, while the exports (excluding coal and coke) increased from 48,773 tons in 1929 to 79,781 tons in 1930. The coke shipments also for the eleven months indicated an increase of 15 per cent., the total being 90,915 tons. As was the case with other local ports, the coal shipments showed a considerable decrease at 4,314,175 tons, a fall of 361,180 tons, equal to 7.7 per cent. decrease.

Personalia.

Mr. Alfred Raynes, of Messrs. Steel and Raynes, Ltd., has been elected traders' representative on the Tyne Improvement Commission to the vacancy caused by Lord Kirkley's appointment as a life member. Mr. T. F. Blair, an official of the Transport and General Workers' Union, has been appointed a life member of the Tyne Improvement Commission by the Ministry of Transport.

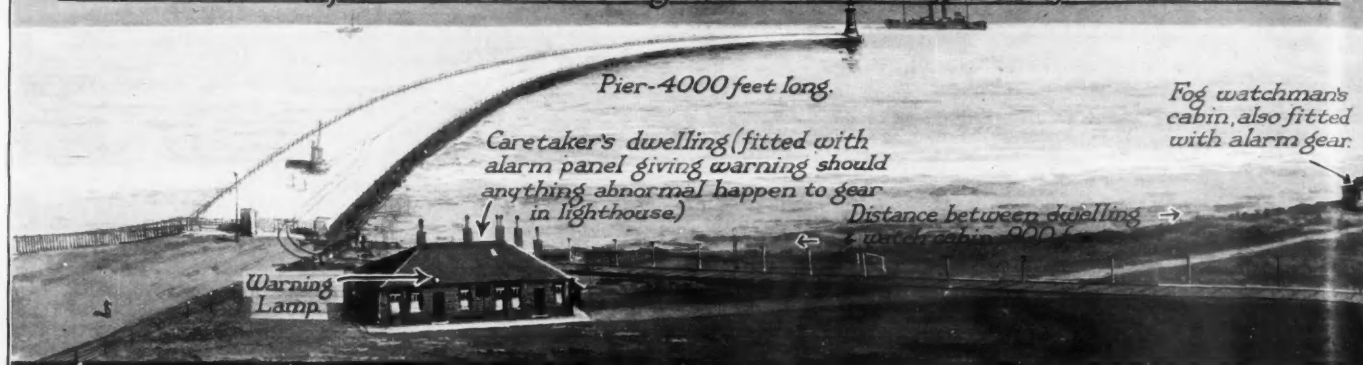
Mr. T. E. Thirlaway retired at the end of the year from the board and chairmanship of Messrs. Swan, Hunter and Wigham Richardson, Ltd., Mr. J. Denham Christie, vice-chairman, succeeding Mr. Thirlaway as chairman.

Mr. W. C. McMillan has been appointed by the River Wear Commissioners resident engineer at the South Docks, Sunderland. Mr. McMillan has just returned from India. He was formerly assistant engineer on the River Wear Commissioners' staff.

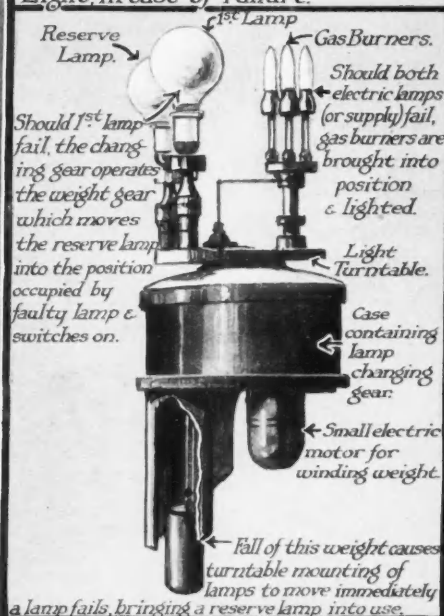
Obituary.

The last month of 1930 removed many figures well known in the commercial life of Tyneside. Amongst these were Mr. Edward Pierre Martin, head of the firm of Messrs. H. A. Brightman and Co., coal exporters and shipbrokers, Newcastle; another was Mr. William Bassett Sowerby, a director for 40 years of Charlaw and Sacriston Collieries and Houghton Main Collieries, while a third was Mr. James Lithgow, who died in Newcastle at the advanced age of 95. He was a Customs officer in Newcastle for 40 years.

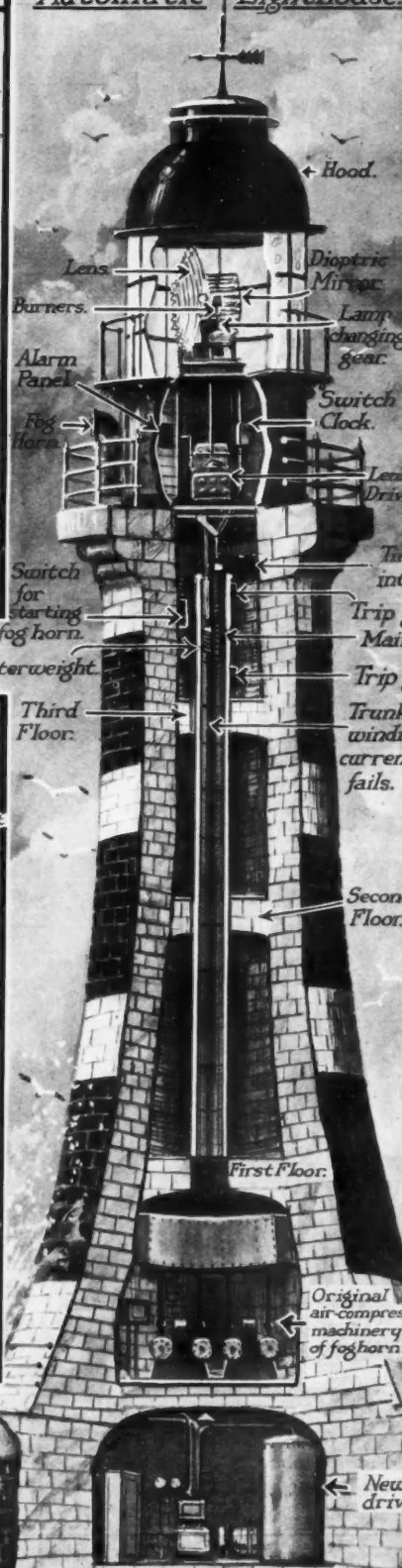
The automatically controlled Roker Lighthouse at the mouth of the River Wear.



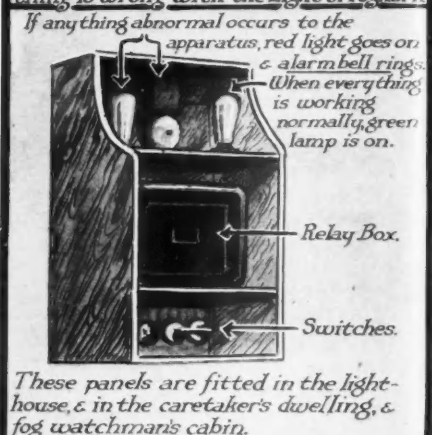
Automatic Gear for replacing defective Light, in case of Failure.



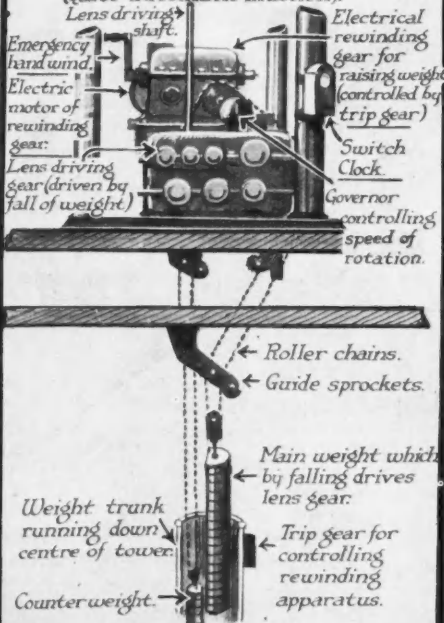
Part Section of Automatic Lighthouse.



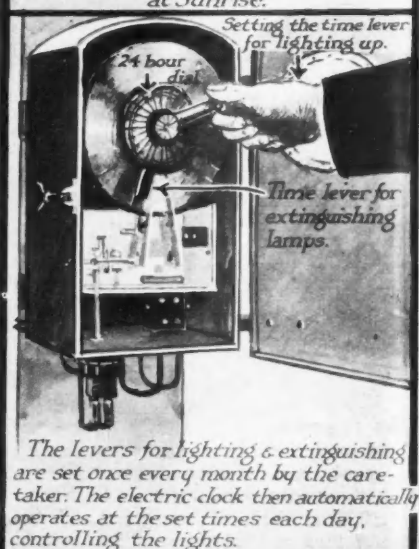
Though the Gear is so reliable that Alarms are very rarely needed, nevertheless this form of Alarm Panel instantly warns the Caretaker if anything is wrong with the Light or fog horn.



Lens Driving Gear (quite automatic in action).



The Switch Clock which lights up the Lantern at Sunset & switches off at Sunrise.



Roker Pier, Sunderland: Light and Fog Horn.

Conversion to the Order of the Wear Commissioners by the Gas Accumulator Company, Lighthouse Engineers, Beacon Works, Brentford.

THE conversion to electric power of both light and fog signal apparatus at Roker Pier, Sunderland, forms a somewhat notable instance, as the conditions to be fulfilled called for an equipment which probably is at present unique in lighthouse service.

The light before conversion comprised an incandescent oil vapour burner mounted at the focus of a single panel lens of the second order. The lens was rotated by a weight operated clock, wound by hand.

A condition of the conversion was that the present lens and pedestal should be retained, and that the light power and character should remain unaltered.

The "Aga" electrical equipment offered was suitable for compliance with these conditions, and preliminary tests conducted to ascertain that the light power and character could be repeated were wholly successful.

The air compressors employed for operating the fog syren were driven by gas engines.

Both light and fog signal are located at the end of the pier and are some 1,200 yards distant from the shore.

The electrical installation at the light includes for automatic operation. To accomplish this an "Aga" exchanger unit carrying two electric lamps of 750 watts rating for use in succession, and a stand-by light in the form of a town's gas burner comprising a group of four incandescent mantles is provided.

The electrical energy is derived from the Sunderland Corporation mains, the system of supply being 220 volts, 50 periods, single phase.

The town's gas supply for the stand-by burner has been obtained from a service previously in existence along the pier.

The lens is rotated by means of a weight-driven clock, electrically re-wound at frequent intervals.

A clock-operated time switch at the lighthouse functions in switching the light "on" and "off," starting and stopping the rotation of the lens, and in tripping the gas cock for the supply to the stand-by light source.

Upon the light being extinguished each morning the electrical retaining gear is de-energised, allowing the exchanger to move (by gravity) and take up a position of rest with the town's gas stand-by burner at the focus of the optic. Upon the operation of the controlling switch at lighting time each evening the town's gas burner comes into service and remains in operation for a short period before being automatically replaced by an electric lamp.

By this arrangement the apparatus is subjected to a daily test.

Fog Horn.

The existing fog horn and timing mechanism has been retained, and is operated by a motor-driven air compressor. The gas engines previously used remain in reserve.

Remote control of the motor-driven compressor is provided at two points.

The motor driving the two-cylinder air compressor is totally enclosed and controlled by gear of standard type, comprising one triple pole stator contactor with three overload releases fitted with adjustable time lag, together with the necessary rotor contactors and resistances for accelerating the motor, including automatic adjustable time element for closing the rotor contactors in succession as required. Starting and stopping of the compressor motor is effected by two-way switches located one at each control point.

The system of supply is 380 volts, 50 cycle, 3 phase, and is obtained from the Sunderland Corporation mains.

Alarms.

To meet the conditions of the contract a system of alarms has been provided for both light and fog horn. Visual and audible signals are given at the keeper's dwelling and at the watchman's cabin, respectively situated about 1,200 and 1,500 yards from the lighthouse.

The alarms for the light are within the keeper's dwelling, where the exhibition of a green light denotes normal operation, and the exhibition of a red light and or the sounding of a bell denotes (1) failure of electric supply; (2) failure of electric lamp in service; (3) change of light source to town's gas supply; (4) slowing down or stoppage of rotation of lens; (5) failure of automatic re-wind of lens driving clock; (6) failure of the clock switch control; (7) blowing of main or alarm circuit fuses.

The fog horn alarm panel is at the watchman's cabin, where visual and audible signals similar to those arranged for the light are provided. The indications given are as follows: (1) failure of electric supply; (2) temporary low voltage conditions of supply; (3) failure of blast timing gear; (4) failure of pressure operated contacts to close; (5) blowing of main or alarm circuit fuses; (6) overload, due to adverse starting conditions.

In addition to the automatic electric lighthouse equipment here outlined, similar equipments have been designed, manufactured and installed by the Gas Accumulator Company at Ras Serani, Mombasa; South Pier Lighthouse, South Shields, and the Grove Lighthouse, South Shields.

The illustration on page 117 shows the various phases of working.

Fleetwood Dock Scheme: A Scale Model to be Constructed.

SIR HAROLD HARTLEY, one of the vice-presidents of the London, Midland and Scottish Railway Company, has visited Fleetwood to investigate the suggested alterations made by the Fleetwood Fishing Vessel Owners' Association, Ltd., to the new dock scheme originally propounded by the railway company. The construction of the new fish dock and other schemes of extensions for the accommodation of the fishing industry are estimated to cost between £500,000 and £750,000. Sir Harold was accompanied on his tour of the present docks and of the site of the proposed new dock by Mr. E. Towne, the President of the Owners' Association, and Commander E. D. W. Lawford, of the Iago Steam Trawler Co., Ltd. Various suggestions which have been put forward by the railway company's engineers have been discussed with the trawler owners. It is expected that similar meetings will be held frequently before the Bill, in which the railway company seeks powers to construct a new dock, receives Parliamentary consideration. The important question of the position and form of the entrance to the proposed dock remains one which has yet to be settled. A deputation from the Fleetwood Urban District Council has attended a conference at Euston with the solicitors and engineers of the railway company as to the Bill which is to be promoted in the present Parliamentary Session to authorise the construction of the dock. At the conference there were also present Mr. John Wood, the dock superintendent at Fleetwood, and Mr. N. L. Wallis, the resident engineer of the railway company at Fleetwood. After a long interview satisfactory arrangements were arrived at,

chiefly concerning the diversion of the Copse Brook, which at present discharges into the section of the harbour included in the new dock scheme.

Before the London, Midland and Scottish Railway Company build their new dock at Fleetwood, a working scale model costing about £1,000 will be made in order to make experiments. At present there is only one such model in existence—that of the Severn barrage scheme for the generation of electrical power. This model is now at the Manchester University.

Visit of the Commercial Secretary to His Majesty's Embassy at Rio de Janeiro.

The Department of Overseas Trade announce that Mr. Stanley G. Irving, the Commercial Secretary to His Majesty's Embassy at Rio de Janeiro, is now in this country on an official visit. Mr. Irving will be available at the offices of the Department during the periods 2nd—6th and 23rd—27th February to interview manufacturers and merchants interested in the export of British goods to Brazil. He will also visit a number of industrial centres in the provinces.

Firms desiring interviews with Mr. Irving in London or information regarding his arrangements to visit provincial centres should apply to the Comptroller-General, Department of Overseas Trade, 35, Old Queen Street, London, S.W.1., quoting the reference 2111/1/30.

Scottish Harbour Notes.

Meeting of the Clyde Navigation Trustees.

AN interesting forecast of the year 1931 was made by Mr. W. F. Robertson when presiding at a recently-held meeting of the Clyde Navigation Trustees. Mr. Robertson observed that they were not opening the new year as a Trust under too auspicious circumstances. "We have vessels laid up all over the harbours—probably more than ever before," he added, "and we have a serious falling off in many of our important trades. But one must take a long view of matters such as these, and the year 1931 must be an outstanding one in the history of the Clyde Trust because we are looking forward to add considerably to our undertakings—a step which pre-supposes our country's and our Empire's ability to hold its own in the competitive markets of the world." One could only hope that all concerned in industry (he added) would find a method of playing their part in this development, and the Trustees' duty was to see that every department of the Clyde Trust played its part in assisting industry to that end.

Additional Rebates on Charges at Glasgow Harbour.

At the same meeting of the Clyde Trust additional rebates on charges leviable at Glasgow Harbour were decided upon after consideration of a report by a special committee on de-rating relief; this committee (it being explained) having been appointed to consider how relief from local rates payable by the Trustees through the operation of the Local Government (Scotland) Act, 1929, should be apportioned among the traders and shipowners. In this report the committee stated that owing to the continued decrease in the volume of some of the goods in receipt of rebates from charges—mainly, coal, iron, ore and iron and steel—it was apparent that the total estimated rebates would fall short of the total de-rating relief to be granted to the Trustees. That total had now been practically confirmed at a little over £88,000, and the committee recommended by a majority that additional percentage rebates be granted as from the beginning of January to the end of September, 1931, subject to review at any time. It is estimated that the present rebates and the additional rebates will result in a total relief of £86,799 the effect of the additional rebates being relief to the extent of £2,727 on iron and steel goods, etc.; £4,357 on graving docks; and £7,962 on all vessels other than new vessels.

Meeting of the Aberdeen Harbour Board.

It was reported at a recently-held meeting of Aberdeen Harbour Board that—for the year ending September last—the accounts showed a net surplus of £12,456 which was the largest surplus since the year 1912. The ordinary revenue (it was reported) was £150,947 during the period under review which represented a decrease of £4,150 from the previous year, but, on the other hand, there had been a reduction in dues and services which represented £7,308. This, therefore meant, that—even when there was taken into account an increase of £1,825 in the salmon fishing—there was still shown a gratifying traffic increase. The ordinary expenditure was £120,603 (a reduction of £10,612) while the gross surplus was £32,343, of which £19,887 had been carried to the sinking fund and the balance of £12,456 to the revenue account. The net liabilities were shown £850,719, and it was satisfactory to note that the valuation of the harbour undertaking on a conservative basis showed a surplus over net liabilities of well over £500,000. The amount of money borrowed stood at £882,115 which was less than the previous year.

Increase in Volume of Traffic at Aberdeen Harbour.

It was further reported at this meeting of Aberdeen Harbour Board that—with regard to the volume of traffic—there were increases in the tonnage of trading vessels of 26,604 tons, and of fishing vessels of 90,533 tons over the previous year. Imports showed a small increase of 2,684 tons, and exports showed a disappointing decrease of 10,407 tons. The volume of traffic was creeping slowly towards the harbour's pre-war record of 1913, but they had still a bit to go. They were still behind in the tonnage of trading vessels by 9½ per cent.; in goods 18½ per cent.; and fish landed, 3½ per cent. The number of trawler arrivals had increased 24 per cent., and the tonnage of fishing vessels entering the port was up 50 per cent., and yet the quantity of fish landed was, as stated, 3½ per cent. less.

New Grain Elevator Warehouse for Leith.

Leith Dock Commissioners have approved of a recommendation of the Works Committee that a new grain elevator warehouse should be constructed at the Imperial Dock to take the place of the old warehouse which was destroyed by fire about a year ago. It is understood that a suggestion considered by the Works Committee was that a new grain warehouse should be built on the site of the old warehouse at the Edinburgh

Dock with discharging plant at the Imperial Dock, but it was ultimately agreed that the best policy was to erect the new warehouse and necessary discharging plant at the Imperial Dock. One consideration that weighed with the Works Committee was that increasing tendency to utilise larger vessels for grain cargoes and the consequent need for deeper water berthage, and it was also felt that local traders had already clearly expressed their choice of the Imperial Dock site. When this subject was discussed at a recent meeting of Leith Harbour Commission, Mr. J. Lindsay (who moved the above recommendation) stressed the necessity for larger vessels being accommodated and urged that efficiency was of the first importance in attracting trade to the local harbour.

Temporary Accommodation pending Completion of the New Warehouse.

It is also reported that the Works Committee of Leith Harbour Commission has also considered the question of temporary accommodation and facilities for grain cargoes pending the completion of the new warehouse. In that connection the Superintendent (Mr. A. H. Roberts) reported upon the action he had already taken as an emergency measure to provide temporary storage accommodation in a shed for the cargoes of a large importer of grain. Mr. Roberts also suggested the erection of a corrugated iron shed capable of holding 27,000 quarters of grain in sacks, and he estimated the cost at £3,000 if erected on the site he described south of the Edinburgh Dock. In view of the opinion of the committee on the subject of the site of the new warehouse it was resolved to erect the shed, but on the site of the old grain warehouse, and Mr. Roberts indicated that a revision of the estimated cost of the shed might be necessary in consequence of the site chosen. The Commissioners approved.

Greenock Harbour Trustees.

Greenock Harbour Trustees have approved of a scheme for the widening and deepening the entrance to the Garvel Graving Dock which scheme (it is estimated) can be carried out without encroaching on the Trust's borrowing powers. It is hoped that these improvements will result in the creation of a new industry of ship repairing which at present flourishes on the East Coast, and the suggestion is that the dock should be capable of taking vessels of at least 10,000 tons. Subject to the necessary legal arrangements, and to an Exchequer grant of 90 per cent. of the wages of the unemployed men taken on for the work, it is proposed to reconstruct the existing obsolete entrance to the dock so that it may be used by vessels of modern design to its utmost capacity without being restricted at the entrance. The work is expected to cost about £26,000, and the balance of the cost after deduction of the Government grant is to be reimbursed to the Harbour Trust by the Greenock Dockyard Company, Limited, who will be given the exclusive use of the dock for a period of fifteen years after the completion of the alterations and who during that period will be free of all rent and rates on vessels they place in the dock.

Garvel Graving Dock Scheme.

Great satisfaction has been expressed locally at this decision of the Greenock Harbour Trustees to proceed with this important scheme at the Garvel Graving Dock, and it is felt that such a scheme will in due course lead to very important trading developments. It is understood that the new entrance will have perpendicular sides 70-ft. apart, and a sill with a minimum of 29-ft. 6-in. below high water ordinary spring tides and will be equipped with steel leaf gates operated by electric winches. It is hoped that the modernisation of the dock by the provision of this entrance and the occupation of the dock by the Greenock Dockyard Company (with whom the Clan Line is closely associated) will mean the establishment of a new centre for ship repairing on the Clyde which will ultimately give employment to a considerable number of workers.

Reduction of Rates for Vessels laid-up at Greenock.

While dealing with Greenock Harbour Trust affairs it is also worth noting that it has been decided to reduce by 25 per cent. their rates on vessels laid up in the port and harbours of Greenock during the calendar year 1931. It is understood that this has been done to ease the position for shipowners during the present depression in the shipping trades which has resulted in so many vessels being laid up that the usual accommodation in the Gareloch, etc., is already over-taxed. The port and harbours of Greenock can provide accommodation for only a limited number of vessels, and it is stated that the Trustees have before them applications for several large vessels to be up there. The reduction now announced is in the general lying-up rate per week, but it is learned that the Trustees are prepared to consider a lower compounded rate in respect of vessels lying up for long periods.

Irish Harbour Matters.

Dublin's Successful Year.

Galway Harbour Scheme.

Belfast's Record Year.

Dublin.

Dublin Port and Docks Board's Year.

AT the New Year's Day meeting of the Dublin Port and Docks Board, Mr. C. E. McGloughlin, chairman, stated that the Board had had a comparatively successful year considering the condition of industry generally, and he thought they might congratulate themselves on the fact that they had held their own and that things had worked out smoothly. He attributed that largely to the fact that the Board had been constantly and continuously developed and improved, and was a port that shipping generally was glad to come to. Their tonnage both for cross-Channel and overseas shipping had gone up. There had been healthy co-operation, and he thought that "healthy co-operation" should be their watchword during the present year.

Mr. Wm. Field associated himself with the remarks of the chairman and said there was no room there for pessimism.

The Lord Mayor (Senator Alfred Byrne), Mr. Hewart, Mr. David Barry, and Mr. P. Belton also spoke in complimentary terms of the port.

Dundalk Harbour Board Nervous.

Correspondence between the Secretary, Dundalk Harbour Board and the Irish Free State Minister for Industry and Commerce, read at a meeting of the Board in question, expressed apprehension on the part of the Board that there was a pooling arrangement existing between the Dundalk and Newry Steam Packet Co. (now controlled by Coast Lines), and the L.M.S., and that this was operating to the detriment of the Port of Dundalk. The Minister replied that, from his knowledge of the several companies, he did not think such a pooling arrangement as was suggested had been entered into. It was suggested that the Board apply to the companies direct. The letter stated that the total numbers of animals shipped *via* the Ports of Greenore, Dundalk and Drogheda during the past three years were as follows, and these did not indicate a diversion of traffic to Greenore or Drogheda.

		1930	1929	1928
Dundalk	...	25,630	44,080	34,829
Drogheda	...	47,899	47,314	64,383
Greenore	...	72,460	81,832	74,321

The chairman (Mr. Twihill) said the fact was that a lot of cattle were going via Greenore which should go through Dundalk.

It was agreed on the suggestion of Mr. Glendon that the Board should ask the Minister to use his influence with the Dundalk and Newry Co. to give an efficient service to Dundalk, to meet the requirements of the export cattle trade.

Bantry Bay as a Port of Call.

The possibilities of Bantry Bay as a port of call for Trans-Atlantic shipping, were dealt with by Mr. D. O'B. MacAteer, President-Elect of the Engineering and Scientific Association of Ireland, at a meeting held in the Architects Hall, Dublin. Mr. MacAteer examined the four suggested ports—Galway, Blacksod, Bantry and Cobh, pointing out that Galway and Bantry were easily accessible with larger areas of water at the necessary depth than Blacksod or Cobh, but said they might take it that the Blacksod proposition would not be revived. The increased depth of ships in recent years, he added, seemed to include Blacksod, where, all over, dredging would be needed. The entrance to Galway and Bantry was easy, but there was no shelter inside Galway Bay, and a breakwater would have to be constructed. At Bantry, Bere and Whiddy Islands provided a natural breakwater. Inside were sheltered places, which from the navigation point of view there was no difficulty in reaching.

The capital cost of a port at the four places mentioned and the annual charges in connection with them would be:—

		Capital Cost	Annual Charges
Galway	...	£2,000,000	£120,000
Blacksod	...	£1,500,000	£110,000
Cobh	...	£500,000	£50,000
Bantry	...	£250,000	£15,000

The annual cost of dredging at Blacksod might be anything from £10,000 to £40,000, and continual dredging would have to be done at Cobh at a problematical cost.

Bantry, said Mr. MacAteer, was large and safe and possessing easy access at all stages of the tide, while there was room in the fairway for a fleet of vessels to manoeuvre at once. There was shelter there from all winds and from heavy seas. The cost of development was the lowest by a substantial margin, and no dredging would be required.

For economic development, Bantry Bay port would also have to be suitable as an air port. It had been used by the British and the United States Naval Air Services and was in every way suitable as a base for modern flying boats. The extension of the railway line down to the wharf would not present any great engineering difficulties. The proposed site had wonderful natural advantages, which made it an obvious selection for a sea and air port, and the capital cost of its development should not exceed £250,000.

He believed that the main influence in bringing some companies to Cobh or Galway at present was the prospect of bringing Irish emigrants to the United States. A simple decision of the shipping companies could make a port of call at Bantry in the immediate future, as far as shipping in the emigrant trade was concerned. There should also be a prospect of attracting tourist traffic to Bantry, as it was so near Killarney.

Time-saving Advantage.

The saving of time that would be effected by establishing a port of call at Bantry would be, approximately—from London 9½ hours, Paris 9½ hours, Hamburg 21 hours, Berlin 21½ hours, Liverpool 8½ hours.

It seemed to him that the proper course would be to open negotiations directly with Continental interests. If these could be convinced that the proposed port of call would be an economic proposition there should be no difficulty in raising the comparatively small amount of capital required.

There was another possibility which would be of interest to the Irish Free State generally. That was that the port of call should be established by an Irish company, or local authority, with or without a subsidy from the Government, and that an Irish-owned air transport company would do the mail and passenger-carrying between Bantry and the various European capitals. This would give Ireland a footing in the air system of Europe which she at present badly needed.

Galway Harbour Scheme.

A big step to the projected development of Galway Commercial Harbour, was taken when a deputation from the Joint Harbour Development Commission appeared before the Galway County Council who agreed to strike a rate of 4d. in the £, equal, approximately to £8,000 a year, to guarantee portion of the interest on the loan which is to be sought for carrying out the work. Galway Harbour Commissioners have pledged all their available income towards the same object, and Galway Urban Council has agreed to a rate of 1s. in the £ to which will be added the County Council rate of 4d.

The Development Committee represents all the local bodies, and Mr. T. J. W. Kenny, on behalf of the deputation, said that the scheme would cost £335,000 and that it would make the harbour sufficient for the commercial and industrial needs of Galway. Under the scheme, the rock barrier fronting the docks and rendering them incapable of receiving large ships, would be cut away, and a deep water channel would be made for 1,000 yards out towards the Mutton Island Lighthouse, and the existing docks would be deepened, under-pinned and enlarged, so that they would be capable of accommodating ships of 24-ft. draught, and of 8,000 to 10,000 tons.

The Galway Harbour Commissioners, out of revenue, already had spent £7,000 on a new tender; had built two Customs and transit sheds, costing £4,200, and contributed to a disinfecting station costing £1,250. They had also erected cattle and sheep pens costing £900. In other words, in five years, the Harbour Board had expended out of revenue £13,350 on the development of the harbour. In addition they were paying off an old loan, and they had a debit balance at the moment of something like £4,000. In the meantime their revenue actually had increased, and with even the present facilities, they hoped to increase it to £2,500 a year.

The shipment of cattle from Galway had increased from 4,567 in 1927 to 10,381 in 1930, and if they had deep water docks where vessels could come alongside at any state of the tide, they would not only increase their export trade but the goods brought in would be greatly cheapened. One shipping company had promised a weekly service which would greatly improve facilities for the export of cattle.

Irish Harbour Matters—continued.

The development of the port, he added, would mean an enormous increase in the rateable value of the town, which also would benefit the finances of the County Council and reduce unemployment.

*Belfast.**Belfast's Record Year.*

At a meeting of the Belfast Harbour Board on January 6th the Harbour Master presented a gratifying report. It showed that 361 vessels arrived during the period extending from 14th till 31st December, as follows:—

Coastwise and cross-Channel, 327; foreign, 24; non-trading, 10.

The total tonnage of the vessels, which arrived from 1st January till 31st December, was:—

Coastwise and cross-Channel, 2,810,109, an increase of 267,779 compared with the corresponding period of 1929; foreign, 737,256, an increase of 100,451; non-trading, 128,351, an increase of 29,759; total, 3,675,716, an increase of 397,989.

The chairman, Mr. R. E. Herdman, D.L., observed that these figures constituted a record for the port.

Steamers using the Port.

The following shows the nationality of the steamers from foreign ports to Belfast with cargoes during the year 1930:—British 326, Dutch 53, American 46, German 34, Swedish 12, Norwegian 17, Italian 6, Greek 5, Japanese 4, Danish 3, Roumanian 3, Jugo-Slav 1, Belgian 1, and Spanish 1—total 512.

Belfast Merchants and the Port Authority.

Belfast shipping men and merchants agree that the year just closed has been one of the most cordial relationship between their interests and the Port Authority of Belfast. As one merchant, who is an importer in a large way, said, the Harbour Board has conducted the affairs of the port during the year with the greatest satisfaction to the business community.

In conversation with Mr. R. E. Herdman, D.L., Chairman of the Belfast Harbour Board, that gentleman said it was satisfactory that the Board's revenue for the year 1930 had been in advance of 1929.

Improvements to be Undertaken.

Alluding to the establishment of industries in the vicinity of the harbour and on the Board's premises, Mr. Herdman said that a firm of flour millers had approached the Board some time ago with the object of obtaining land on which to erect a mill, and after protracted negotiations it had been found by the Commissioners that in order to provide the land required it would involve making a new channel.

"On the scheme as a whole, including the making of the channel," proceeded Mr. Herdman, "we are spending some

£300,000. On their part the firm of millers are under contract to build the mill at their own cost, involving a considerable outlay and providing employment for a large number of men. When the scheme has been completed and the mill is in operation, it is not improbable that Belfast may be the distributing centre for surplus products to other parts of the kingdom.

"All this work," remarked Mr. Herdman, "comes at a very opportune time, and, in view of the state of trade and the large percentage of unemployment, it is gratifying to know that the combined operations of the Harbour Board and the firm of millers are giving employment to 530 men. Not only that, but the spoil which is being taken out of the new channel is being employed in the reclamation of land, and by the time the channel is completed we hope to have reclaimed the land to Tillysburn."

Belfast as an Air Port.

Discussing the suitability of Belfast to become one of the future great air ports of the world, Mr. Herdman said that the Harbour Commissioners had ample land at their disposal, which had been declared to be eminently suitable for aviation purposes. The Harbour Trust was, he said, most anxious to facilitate any scheme that had for its object the inauguration of an air port at Belfast, and would watch developments tending in that direction.

"As a matter of fact," added Mr. Herdman, "the Board has already made an offer of land for air port purposes on the most favourable terms which they are empowered to do under the existing statutory powers, and we shall at all times be fully alive to the interests of the port and city in that direction."

Mr. Herdman said the policy of the Board was one of a progressive character, and that policy would be pursued in all matters relating to the development of the port and the vast interests it served, consistent with economy and sound principles of administration. In that respect, Mr. Herdman added, the Board was following the lead they had received from those who had gone before them, "and to whom," he said, "all credit for the foundation of the Belfast Harbour, upon whom its present development and splendid position now rests."

Statistics of the Port.

Unfortunately the depression in trade has re-acted unfavourably upon the goods traffic at Belfast, which shows a total turnover of 2,972,416 tons for eleven months ending December, as compared with 3,103,138 tons for the corresponding period of 1929, a decrease of 130,722 tons. The decrease is principally accounted for by a shortage in the imports of coal and in the exports of potatoes.

Douglas Harbour Works.

THE construction of the new pier at Douglas (Isle of Man) will begin when certain steam cranes arrive.

The new pier will be constructed by setting 15-ton "pre-cast" blocks in the bed which has been created for it by the dredging. They will be laid down by the powerful crane, appropriately named Hercules. The blocks will be made in the Harbour Commissioners' yard at the Battery Pier, and for that purpose another giant gantry crane, named Goliath was ordered and delivered about the middle of January. The makers of both of them are Stothert and Pitt, of Bath. The actual laying of the blocks will not begin till late spring. Up to the present, practically the whole of the former pier head, on which the lighthouse stood, has been removed, except for a circular sandstone shell, which is not being taken away until the last moment, because of the protection it gives to the work in process. Over 8,000 tons of material have been lifted out.

Across the end of the old pier head and for a short distance to the north, a temporary retaining wall has been constructed, consisting of a line of steel sheet piling driven to a depth of 20-ft. below low water, on top of which is a concrete wall. The outer end of the old pier wall on the southern side, which is to form part of the new quayage, is being rebuilt in limestone, instead of the former sandstone, and made uniform with the limestone of the Steam Packet Company's berth lower down. It is also being built to a new batter. On the opposite side, to the north, a considerable amount of new material is being laid down, so as to make a total width of 70-ft. When this new portion has been brought up to deck level the Hercules crane will be set up, occupying practically the whole of the space, with its arm in the centre, reaching out towards the sea in

front. This crane will be on rails and will, of course, move forward as the space in front of it is filled up to the required height. The Fort Anne jetty has been shortened by 35-ft. so as to make more room between the jetty and the extended pier. A new limestone-faced wall has been constructed across the head of the jetty on a line parallel with the southern edge of the dredged area. This work is very nearly finished.

A viaduct is being built between the Victoria Pier and the new Red Pier, crossing the little beach and then running parallel with the north side of the Red Pier for a considerable distance. This viaduct has been under way since November and a good portion now appears of the first part of it, a solid wall of 50-ft. long by 50-ft. wide. The remainder of the viaduct will be open piling, a concrete deck mounted upon concrete columns of 4-ft. diameter.

Another scheme on which the Harbour Board is engaged is the strengthening of the Victoria Pier on the south side and its widening (concurrently with the widening done by the Douglas Corporation) on the north. The wall is complete, and the only thing remaining undone is the surfacing. There is also a "blanketting" of the wall of the northern side of the Tongue, i.e., facing it with concrete, and the raising and re-conditioning of the Tongue roadway and some removal of rock near the Swing Bridge. An unanticipated job was the restoration of the harbour bed after the floods. For weeks men have been clearing away a huge bank of soil which gathered in the middle of the harbour and also filling up the berths on each side, where the floods have scoured the bottom out. The work is tidal and very tedious.

Hull and the Humber.

Hull Port Improvements.

THE probability that the extension of the King George Dock at Hull would be shortly put in hand and so complete the original plan is not so promising as it seemed a little while ago. Once more it is the question of money which holds the key to the situation. It was made known some months ago that the Board of the London and North-Eastern Railway Company were favourably disposed towards the proposal and that the preparation of plans, etc., had been undertaken. At the January meeting of the Hull Chamber of Commerce and Shipping, however, a letter was read from Mr. Thomas Hornsby, Divisional General Manager of the L. & N.E.R. in which he pointed out that this completion of the dock, which had been urged by the Chamber, would cost approximately £1,400,000, and stating that he did not think the directors would force this expenditure at present.

It is no doubt a large sum to contemplate sinking on capital account in bearing in mind the not altogether satisfactory position of the Company's revenue, but the wider view taken by the more farseeing of those interested in the trade and shipping of the port in that the extra accommodation is urgently needed to meet growing requirements, and if that is so now what will it be by the time the additional dock accommodation is provided? The King George Dock was opened by H.M. the King in July, 1914, with a water area of 53 acres and is accounted the longest and possibly the best-equipped deep-water dock on the North-East Coast. Provision was made in the original plan for the extension to 85 acres by the construction of an additional "arm" and it is this which the Chamber of Commerce and Shipping is pressing for after the lapse of 16 years, during which time there has been no increase in the dock accommodation of the port. On the other hand, it is now undergoing reduction by the closing of the Queen's Dock, recently sold to the Hull Corporation to be filled in and to provide the site of a central square or boulevard. This is now in the possession of the Corporation and will be very soon closed entirely to shipping as the work of filling in proceeds. By this means the port will lose ten acres of water space and although alternative accommodation for the craft and traders using the dock has been provided it is inadequate and accentuates the plea put forward that new works must be taken seriously in hand with the least avoidable delay.

At the same time, however, it must be conceded that the directors of the London and North-Eastern Railway are not entirely unmindful of the needs of the port. In his letter Mr. Hornsby mentioned that the Company were already committed to the expenditure of approximately £500,000 on new facilities at Hull, these including the alteration of coaling appliances, the widening of the quay at St. Andrew's Dock to meet the convenience of the fishing industry. The construction of additional railway sidings and the provision of two floating grain weighing machines and portable elevators for the King George Dock. The Company has also in hand the reconstruction of the fish market at St. Andrew's Dock. Nevertheless there is still the demand for more. Serious complaints are heard of the congestion at the fish dock which is insufficiently large to berth all the steam trawlers which arrive on a busy day. The import fruit traders also are anxious to see the Riverside Quay where they do their business, extended to the limit of the plans authorised which would involve a considerable extension westward.

The Old Queen's Dock.

A difference of opinion appears to exist between the chief of officials of the London and North-Eastern Railway Co. and the members of the Hull Chamber of Commerce and Shipping as to the disposal of the £117,000 paid by the Hull Corporation as the purchase-price of the old Queen's Dock. The latter contend that the railway company made a definite promise to spend the money on improving the facilities at Hull. The Company, however, state that no such definite promise was made and that any suggestion during negotiations for the sale of the dock was conditional on the Chamber withdrawing its opposition to the project—which it did not do. Taking the whole situation into consideration the Chamber of Commerce is disappointed that a more extensive programme of dock work is not to be carried out.

Tonnage entering Hull Docks.

The net registered tonnage entering the Hull Docks and on which dues were paid in 1930 exceeded 7,000,000 tons only for the second time in the history of the port. As a fact last year's total of 7,073,914 tons was the highest ever recorded and compared with 6,992,299 tons in 1929, an increase of 81,615 tons, equal to slightly over 1 per cent. While other parts of the system showed some advance there was a smaller tonnage at

the King George Dock and Saltend Oil Jetty, presumably due to fewer large ships arriving there. A feature of the year's shipping was the notable increase in the number of cargoes received from Soviet Russia, viz., 276 against 187 in 1929 and 119 in 1928. Of the total 190 were sawn wood and pit props for which special storage accommodation had to be provided. The exports of coal to places abroad at Hull in 1930 just topped 2,000,000 tons which were 200,000 tons less than in 1929, while for all the Humber ports the total was 5,983,806 tons against 6,473,405 tons and from Boston to Lynn 410,824 tons against 426,784 tons. Imports of wheat and kindred cereals at Hull were 1,286,240 tons, an increase of 114,234 tons and of timber over a million tons or slightly less than in 1929.

Retirement of Member of Clerical Staff.

After 38 years' service at the Hull docks, Mr. A. W. Lambert, the oldest member of the clerical staff at Hull has retired and been made the subject of a handsome presentation in the presence of a very representative company of members of the clerical, technical and outside supervisory staffs at the offices of the Chief Engineer for docks. Mr. Lambert originally joined the old Hull Dock Company in 1892 and was transferred to the service of the North-Eastern Railway Company on amalgamation the following year. The presentation was made by Mr. H. Hudson, Docks Engineering Accountant, who referred to the many outstanding qualities of their colleague.

Proposed Bridge across the Humber.

The decision of the Hull Corporation to proceed with the promotion of a Bill in the ensuing session of Parliament to construct a road bridge across the River Humber at an estimated cost approaching £2,000,000 has been confirmed at a town's meeting and later by a poll of the citizens. The poll was not a heavy one, the votes cast in favour being 11,958 as against 7,085—majority 4,873. If, and when, the Bill receives its second reading it is expected that it will go before a committee of the House of Lords in the first instance where a keenly-fought contest may be expected. The Humber Conservancy Commissioners, as custodians of the river, are in opposition to the project on the ground of its possible adverse effect upon the navigable channels. Distinguished experts have been engaged on either side and it will be probably on this question upon which the fate of the Bill will turn. The Hull Chamber of Commerce and Shipping is also definitely against, the general view being that Hull, the third port of the kingdom, must not gamble with its destiny as a port on which all are dependent. Questions are also asked on behalf of the shipping interests as to who is going to bear the cost of the dredging or removal of the silt should the Western Docks be silted up. The Engineer to the Humber Conservancy Board has expressed his opinion that serious damage to the river may result from this proposal and it is suggested that it would be wise to accept his advice as an expert who lives on the river and has a lifelong and practical experience of the vagaries of its channels and currents. The various interests at the neighbouring port of Goole are also apprehensive as to what might happen to the navigable channel in the upper part of the river and express a fear that the West Riding Port might become inaccessible to shipping and relapse into the position of merely a village. The majority of the citizens of Hull, however, are disinclined to regard these fears as seriously founded and are relying upon the real convenience and advantage that would ensue to trade and industry by the linking up of the two counties by the proposed bridge. It is pointed out that so far we have succeeded in bridging all our important waterways except the Humber.

P.L.A. Display at British Empire Trade Exhibition at Buenos Aires.

The Blue Star s.s. "Avila Star," which left London on Friday, 16th January, had on board a number of exhibits which are being sent out in preparation for the forthcoming British Empire Exhibition at Buenos Aires, to be opened by H.R.H. The Prince of Wales on the 14th March. The exhibits include a number of unique dioramas which the Port of London Authority have had specially prepared to illustrate the many-sided activities in the Port of London. The dioramas are on a scale not attempted before and include views of the Pool of London from London Bridge, the Royal Victoria and Albert and King George V. Docks, the Port at Tilbury, a meat-discharging berth, and unloading grain at the Millwall Granary. The authority are erecting an attractive pavilion in the Engineering and Shipping Hall in the exhibition grounds.

Notes of the Month.

Retirement of Dover Dock Master.

Captain William Henry Gates, who has been Dock Master on the Dover Marine Station since 1924, retired recently, and a presentation was made to him by the Divisional Marine Manager of the Southern Railway.

Harbour Improvements at Viborg: Financial Vote.

The local press reports that on December 19th the Municipality of Wiipuri (Viborg) voted a sum of F.M. 3,000,000 (approximately £15,500) for harbour equipment. The principal new items are said to be three travelling cranes.

The "Nordschleuse."

The foundation and ferro-concrete wall of the actual lock with its chamber and two heads have been completed. Work at present is proceeding on the mounting of the large sliding gate and the completion of the machine houses. The outer head gate was sunk this summer. The door for the second lock-gate is now being constructed and work is to be begun on the third gate, the substitute gate, in the spring of 1931.

During the past weeks further great areas of the future harbour installations were placed under water, i.e., the canal joining the connecting harbour from the north to the swing bridge, the lock chamber and the intermediary head.

The roadway and swing-bridge have been ready for pedestrians and goods traffic since May and since August for street traffic to the Columbus Quay. At present the roads east and west of the lock chamber are under construction and will permit access to the Air Station by the beginning of 1931.

Last autumn the water dredgers commenced work, however, most of this work will only start in 1931. Work is now being carried out stripping the dykes and excavating for the future turning basin, where the former fort "Brinkamahof" has for the greater part already been demolished.

Judging from the pace the work is proceeding at, the Nordschleuse should be completed according to plan.

Methods of Quoting and Terms of Payment.

A confidential memorandum on methods of quoting and terms of payment prevailing in relation to business with Poland, prepared by the Commercial Secretary to His Majesty's Embassy at Warsaw, has been received and issued by the Department to firms whose names are on its Special Register. British firms who desire to obtain a copy of the memorandum and particulars of the Special Register service should apply to the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1. (Reference No. C.X. 3448 should be quoted).

Vessels Constructed by Wm. Simons & Co., Ltd., during 1930

The following is a list of vessels constructed by Wm. Simons and Co., Ltd., Renfrew, during the year 1930:—

Vessels Constructed.	Tonnage.	I.H.P.	Owners.
Dredger	600	550	Colonial
"	575	600	"
"	4,538	5,300	"
Pontoon	1,233	—	"
Dredger	150	480	"
"	—	120	"
Pontoon	78	—	"

Besides the above a large quantity of dredging machinery was also supplied during the year.

Hydro-Electric Development on the Gatineau River, Quebec.

The Gatineau Power Company, a subsidiary of the Canadian Hydro-Electric Corporation, Ltd., proposes shortly to instal the seventh 34,000 h.p. unit at the Paugan plant on the Gatineau River north of Ottawa. The new generator will raise the total capacity of the plant to 238,000 h.p. When it has been brought into operation the total capacity of the three plants on a 26-mile stretch of the Gatineau River will reach 470,000 h.p.

There is space in the Paugan plant for the addition of an eighth unit, and an additional unit in both the Chelsea and Farmers' Rapids plants (making five in each) could be installed. There remains to be added before these plants have reached their designed capacity a total of 92,000 h.p.

The first generator was started at the Chelsea plant in January, 1927. This chain of three plants on the Gatineau River constitutes one of the greatest hydro-electric developments in Canada, an installation which, when completed to the full 18 units, will permit the development of 562,000 h.p.

Richborough and Cross-Channel Ferry Scheme.

A Cross-Channel Ferry Scheme between Richborough, which is situated near Sandwich in Kent, and Calais is at present under consideration and, if carried out, will involve a considerable amount of constructional work on the River Stour to allow of sufficient room for steamers to turn and also the building of vessels which would carry fifty 10-ton trucks similar to those on the Harwich-Zeebrugge services.

This scheme will lessen the time by some hours than the one which is at present in vogue from Zeebrugge to Harwich.

Richborough is situated quite close to the main line railway and is ideally situated for this purpose.

Kiel Canal Traffic in November, 1930.

A report received by the Department of Overseas Trade from the Acting British Consul-General at Hamburg states that there was a decline of 0.08 per cent. in the number of vessels passing through the Kiel Canal during November as compared with October, and of 8.18 per cent. in the total tonnage.

Steam and motor vessels represented 91.27 per cent. of the total tonnage and 78.87 per cent. of the vessels carried cargo.

Of the total of 4,745 vessels using the canal in November, 2,280 vessels with a total of 1,676,356 net registered tons were registered sea-going ships, comprising the following:—2,146 freight and passenger vessels of 1,670,216 n.r.t.; 106 tugs of 3,241 n.r.t.; 27 fishing vessels of 2,899 n.r.t.

Further, 2,288 sailing vessels of 122,773 net registered tons, 136 lighters and barges of 39,854 net registered tons, and 41 pleasure and Government vessels of 16,464 net registered tons.

The vessels were loaded as follows:—1 with passengers, 18 with cattle, 214 with coal, 40 with stone, 47 with iron, 350 with timber, 970 with grain, 30 with ore, 615 with other bulk goods, 1,094 with general cargo, 88 with miscellaneous cargo, and 1,278 (or 27 per cent. of the total) empty or in ballast.

Personal enquiries regarding shipping and transport matters should be made at the City office of the Department (Shipping and Transport Section), 73, Basinghall Street, London E.C.2.

Port of London Notes.

London's Shipping.

During the week ended December 24th, 594 vessels, representing 624,523 net registered tons, used the Port of London; 366 vessels (485,386 net registered tons) were to and from Colonial and foreign ports and 228 (139,137 net registered tons) were engaged in coastwise traffic.

During the week ended January 2nd, 1,223 vessels, representing 1,100,679 net registered tons, used the Port of London. This total has only once been exceeded, viz., during the week ended August 11th, 1930, when 1,124,404 net registered tons of shipping entered and left the Port of London. Of the 1,223 vessels, 549 vessels (887,289 net registered tons) were to and from Colonial and foreign ports and 674 (213,390 net registered tons) were engaged in coastwise traffic.

During the week ended January 16th, 1,049 vessels, representing 1,056,766 net register tons, used the Port of London; 490 vessels (847,566 net register tons) were to and from Colonial and foreign ports and 559 (209,200 net register tons) were engaged in coastwise traffic.

During the week ended January 23rd, 1,082 vessels, representing 890,773 net register tons, used the Port of London. 485 vessels (712,164 net register tons) were to and from Colonial and Foreign ports, and 597 (177,609 net register tons) were engaged in coastwise traffic.

London's Annual Shipping—Another Record.

Provisional figures show that 58,083,575 net register tons of shipping used the Port of London during 1930. This represents an increase of over 500,000 net register tons over the total for 1929 and is a record for any calendar year in the history of the Port of London.

Italian Harbour Affairs.

ACCORDING to the statistics which have just been published by the Italian Mercantile Marine Department, the volume of goods imported and exported at Italian ports during the month of November, 1930, reached 2,774,150 tons against 3,276,738 tons in the month of October, 1930, and 2,955,935 tons in the month of November, 1929. During the first eleven months of 1930, the volume of goods unloaded and loaded reached 32,933,283 tons, against 33,874,079 tons handled during the corresponding period of 1929. The share of the Italian Mercantile Marine in this trade during November, 1930, was 1,698,762 tons (61.56 per cent.) against 1,812,452 tons (56.26 per cent.) during October, 1930, and 1,873,750 tons (63.39 per cent.) during the month of November, 1929. It can be seen that maritime trade has shown a decrease which may be considered as a consequence of the general world-wide crisis.

The results of the general maritime trade are also influencing business at the various harbours. At the general meeting of the Consorzio Autonomo del Porto di Genova, Marquis Negrotto Cambiaso illustrated the progress of the harbour enlargements at that port and the importance of the new organization of the Consorzio. In connection with the Italian harbour organisations both the Royal Commissioner of the Port of Naples, Admiral Solari, and the Royal Commissioner for the Port of Fiume, Admiral Genta, have ceased their activities since January 1st, 1931. The harbour facilities of the Port of Naples will be operated by an organisation to be known as "Azienda dei meszi meccanici e degli arredamenti portuali di Napoli." At the head of this enterprise there will be a representative of the Harbour Master of the Port of Naples, to whom the powers of the Royal Commission have been transferred. A Board presided over by the Harbour Master and including the representatives of the Harbour Labour Council and an official of the Royal Naples district High Commissioner.

Shipping in the Port of Venice has shown, during the month of November, after the revival which had been noticed in

the course of the previous months, a decrease which is shown by the following figures:—

	Unloading Tons	Loading Tons	Total Tons
November, 1930	206,462	29,969	236,431
November, 1929	223,245	42,578	265,823
Difference ...	—16,783	—12,609	—29,392

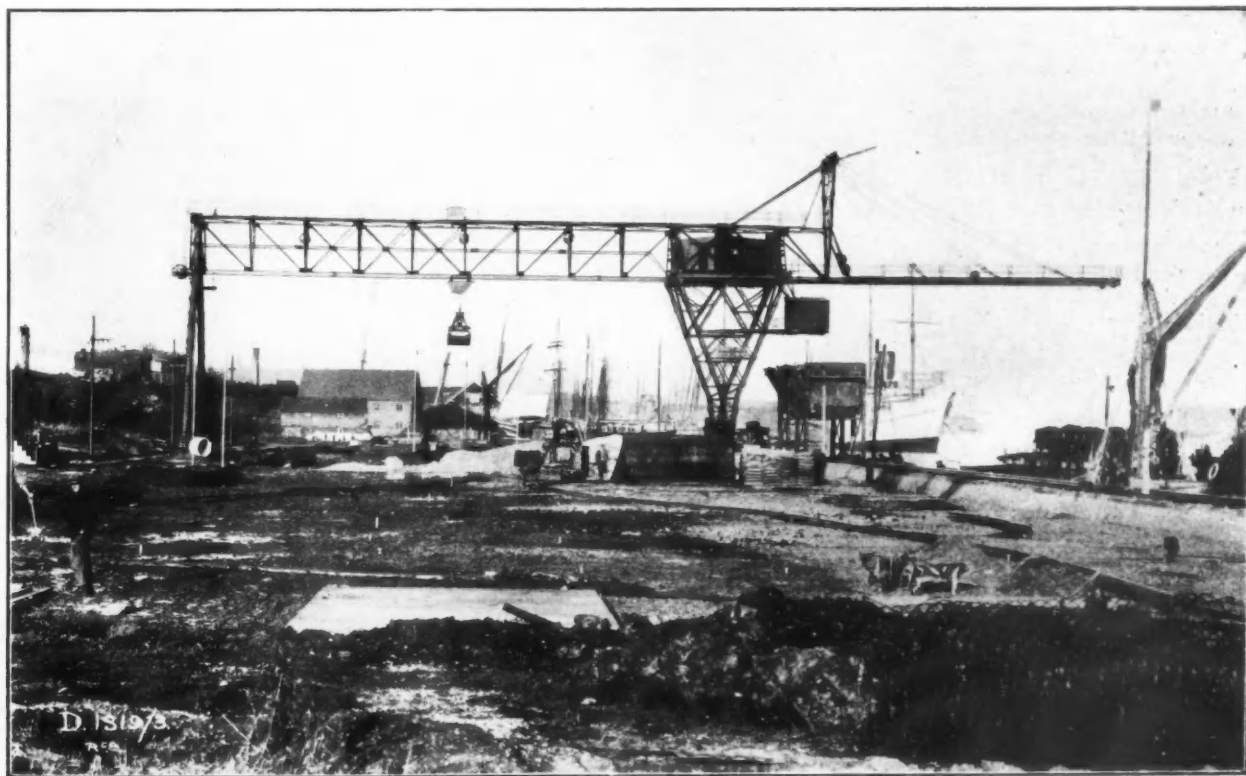
However, trade in the Port of Venice during the first eleven months of 1930 has shown an increase of 23,382 tons in respect to the corresponding period of 1929.

In connection with the situation at the Port of Venice, it should be noted that new enlargements have just been inaugurated, and among them may be mentioned Warehouse F, of two storeys, on the Palazzo Quay, nine electric cranes of 1.5 to 3 tons, two coal electric cranes of 4.5 tons. According to information which has been published in the monthly bulletin of the Provveditorato del Porto di Venezia, two new concrete warehouses, S2 and S3, are to be built by the Soc. An. Cementi Armati Ing. Mantelli, and finally, it has been decided to build the appropriate unloading and warehousing facilities on the first commercial jetty of the Marghera Dock in the Port of Venice with the ordinary financial resources of the Provveditorato del Porto, so that it may be expected that not much time will elapse before the transfer of the coal trade from the Marittima Docks of the Port of Venice to the new Marghera Docks at the north-western end of the Venetian lagoon.

It is reported that harbour enlargements at Palermo are to be resumed, and that the question of improving harbour facilities at other Sicilian harbours is being seriously considered.

It is announced that the Italian Treasury has purchased a site on the hills near Fiume for the erection of a powerful lighthouse to replace the old one which—it is stated—is situated too low.

Electric Grabbing Transporter at Cowes.



One of the Electric Grabbing Transporters installed by Messrs. Stothert and Pitt, Ltd., at Medina Wharf, Cowes, for the Southern Railway.

The accompanying illustration shows one of the electric grabbing transporters installed by Messrs. Stothert and Pitt, Ltd., of Bath, at Medina Wharf, Cowes, for the Southern Railway.

These transporters have been installed for the purpose of

unloading small mixed coal from barges alongside the wharf. They have an output of 75 tons per hour; the span of track rails is 120-ft., and on the water-side the boom has an overhang of 80-ft. The total working load (grab and contents) is 3½ tons, the average load taken by the grab being 32 cwts,

Port of Southampton Topics.

A Year of Activity at Southampton.

DESPITE the general feeling of depression in trade, Southampton is justified in taking an optimistic view of 1931. In recent years Southampton has consolidated its position as premier passenger port in the United Kingdom, and since its strength lies in this direction rather than in regard to cargo the future is far brighter than would otherwise be the case.

The year promises to be one of great activity, for, in addition to the notable extension works being carried out by the Southern Railway Company, a number of new vessels are due to make their appearance during the coming months.

Right early in the year, on January 19th in fact, came the arrival of the second of the Union Castle Line's 20,000-ton motor ships, the "Warwick Castle," sister ship to the "Winchester Castle." Another newcomer early in the year is the British India Company's new passenger steamer, "Kenya," which with the "Karachi," departing later, will be engaged in the passenger service between India and South Africa.

Later in the year the Peninsular and Oriental Steamship Company will place on the Southampton Far East service the first of two handsome "C" Class vessels of 15,000 tons, namely the "Canton." In this connection it is interesting to note that Southampton will this year feel the full effect of the developments on this service by the allocation of larger vessels of between 15,000 and 17,000 tons, a far larger type than has hitherto sailed from this port.

In June the new Canadian Pacific liner, "Empress of Britain," is due to make her appearance. She will be the largest vessel ever owned by the Company, and the biggest steamer that has ever been built to trade within the Empire. She will be of 42,500 tons, and will have a speed of about 25 knots. The "Empress of Britain" is due to begin her maiden voyage to Quebec from Southampton on June 17th.

The year 1931 will also see notable developments in the long-established Java trade from Southampton, for both the Rotterdam Lloyd and the Nederland Royal Mail Line will be able to derive the full advantage to be gained by the additional speed of their latest motor ships. The result of this will be that while each company will maintain, as before, the two weekly sailings, it will be accomplished with one less ship. The "Dempo," a sister craft to the motor ship "Baloeran," will come along in March, when she will take her place in the Rotterdam Lloyd schedule.

Actually in the port the year will be one of progress and great endeavour. The year 1931 will witness, all being well, the completion of the first 1,000-ft. of new deep water quay to be provided by the Docks Extension Scheme. The work on the other parts of the scheme will continue, and with them the activities which by the end of 1933 will provide Southampton with the world's greatest graving dock, though it will need a valiant effort on the part of the engineers to get the work finished in time to welcome the great Cunarder of 73,000 tons, for which it is being primarily created.

Deeper Approach Channel along the Itchen.

In addition to the dock extension works the Southern Railway have decided to deepen the channel of approach to the berths along the Itchen which the Canadian Pacific and other liners use. The channel, which is 32-ft. in depth, is to be given a further 3-ft., and the cost of dredging is estimated at about £35,000. One of the first vessels to use the deeper channel will be the Canadian Pacific new vessel, "Empress of Britain."

Statistics of the Port for 1930.

The official statistics just issued dealing with the Port of Southampton for 1930 show that, although it was a bad year for industry generally, Southampton had little grounds for complaint. There were more vessels at the port during the year than in 1929, with correspondingly improved figures for tonnage and passengers. Cargo was the only "fly in the ointment," and under that head there was a big decrease.

The increases in the number of vessels, and gross and net tonnage, both inward and outward, are substantial when compared with 1929, and the 1929 figures, it is interesting to remember, established a record for the port. There were during 1930, 3,752 vessels inward and 3,751 outward, which were increases respectively over the previous year's figures of 169 and 170. The gross tonnage figures for 1930 were 17,354,130 inward and 17,403,177 outward, both substantially better than the previous year, the increases being respectively 107,538 tons and 166,752 tons. The net tonnage totals tell a somewhat similar tale, the advances in this case being proportionate. The inward total was 9,198,693 tons and the outward 9,230,039 tons, the increases being 71,636 tons and 106,967 tons respectively.

Southampton cannot be said to be experiencing very much good fortune in its endeavours to build up an extensive cargo traffic, for when, a few years ago, the outlook in this respect seemed rosy, the beginnings of the present depression were becoming manifest. These effects have cut deeply into the figures for the past two years. The statistics for 1929 as compared with 1928 revealed an aggregate deficit of about 25,000 tons, for whereas exports mounted by 25,000 tons, the imports fell short by 50,000 tons. Last year the situation grew worse, but as that experience is in common with that of other ports, the only consolation that can be drawn from the figures is that the port has not lost its customers, and can therefore hope for better times when the existing industrial depression passes.

The cargo returns show that during 1930, 600,958 tons were handled inward, a drop of 9,615 tons compared with 1929, and the outward total was 466,645 tons, which shows the big deficit of 120,520 tons when compared with the previous year.

The passenger statistics present a happier contrast which is satisfactory in view of Southampton's exalted position in passenger traffic in the United Kingdom. The number of travellers inward totalled 259,125, an increase of 13,360 over the figures for 1929. There was a drop of 6,339 in the outward figure, the total was 285,321, but on the aggregate there was a balance on the right side for 1930 of about 7,000. This is especially gratifying in view of the fact that the North Atlantic passenger business was badly hit by the consequences of the market fluctuations in the United States and Canada.

Returns show an Increase during December.

The docks statistics for the last month of the year revealed a happier state of affairs than many of the returns for preceding months. The number of vessels, inward and outward, increased by 22, the inward total advancing from 210 to 262, and the outward from 232 to 254.

That increase was reflected in the tonnage returns. The gross tonnage inward bounded from 1,030,781 to 1,141,280, an advance of 110,499 tons, whilst outward the total mounted from 981,582 to 1,081,824, an increase of 100,242 tons.

The net tonnage showed an advance of 70,230 inward and 65,669 outward, the respective figures in that instance being: inward, 610,258, against 540,028 in December, 1929; and outward, 577,203, against 511,534.

The cargo deficit for this month was less than has been the case recently, for, although there was a decrease of 6,896 tons outward, the inward freight increased by 4,714 tons. There were 54,407 tons of cargo inward, as compared with 49,693 in the corresponding month in 1929, whilst the exports were only 32,305 tons, as compared against 39,201.

There was a net increase in the number of passengers, the totals being inward, 8,585, and outward 9,397.

A New Era in Shipping Management.

The year 1931 brings with it extraordinary movements among the Continental lines associated with Southampton which pre-empt a new era in shipping management. Where actual absorption has not been effected there have been arrangements whereby the companies will work in the closest harmony, cutting out all suggestion of competition. They must, therefore, become a powerful and well-equipped factor on the important trade and passenger routes of the world.

These arrangements affect, among others, the Hamburg-America Line, the North German Lloyd, the Royal Holland Lloyd, and the Ocean Line, which are regularly in association with Southampton Docks. Just as the White Star Line and the Cunard Line organise their express winter services with the idea of avoiding clashes in sailings when some of the big ships are laid up, so the Continental lines have worked out their new schedules on the basis of eliminating competition and securing the most economical use of all types of vessels at their command. Some ships are released for routes to which they have not hitherto been accustomed, and when there is a seasonal pressure on any particular service the vessels of one company will be run in conjunction with those of another organisation.

The most striking evidence of this is afforded by the plans of the Hamburg-America Line and the North German Lloyd. For the first time on record those companies have issued a joint list of sailings from Southampton, and although it has not apparently been found possible—it may not even be desirable—to avoid having more than one sailing from this port on a given day, the scheme must certainly allow for an eventual spreading out of sailings, so that there will be very frequent departures for New York.

The arrangement between the North German Lloyd and the Royal Holland Lloyd is that on the South American service

Port of Southampton Topics—continued.

the companies will run their ships alternately. The Royal Holland Lloyd vessels have maintained this service from Southampton for some time with the "Flandria," "Gelria," "Orania" and "Zeelandia," and now the North German Lloyd are interspersing the sailings of those ships with vessels of their own, such as the "Sierra Ventana," "Werra," "Sierra Morena," "Sierra Corboda," "Weser" and "Madrid." There is no indication at the moment that the N.D.L. vessels on the South America run will call at South-

ampton, but the amalgamation of interests brings that possibility nearer.

The same story of community of interests can be told of the Ocean Line, which has used Southampton for some time, and the North German Lloyd. The "Rio Bravo" and the "Rio Panuco" are no longer alone in the passenger service to Vera Cruz, and there is reason to believe that the service will grow with Southampton and Boulogne as the Channel ports of call.

*Notes from Far Eastern Ports.**Bengal.**Calcutta's Foreign Trade.*

CALCUTTA'S trade with foreign countries in November showed a general decline, states a note issued by the Collector of Customs. Imports dropped to Rs.3.54 crores and exports to Rs.7.54 crores. Compared with the corresponding period of 1929 imports fell in value by Rs.1.30 crores and exports by Rs.5.99 crores. The variations in the values of the principal imports as compared with the figures for November, 1929, are shown below by a plus or minus sign:—

	In Lakhs of Rupees
Machinery and Millwork	40 (—16)
Sugar	39 (—39)
Cotton Goods	25 (—1.46)
Iron and Steel	18 (—54)
Other Metals	15 (—10)
Provisions and Oilman's Stores	17 (—2)
Oils, Minerals	15 (—4)
Betel Nuts	11 (—14)
Hardware	9 (—9)
Liquors	9 (—2)

As a result of the general depression in trade all the principal commodities of imports fell in value. Cotton goods suffered most heavily, the value dropping from Rs.1.71 lakhs to Rs.25 lakhs. The decline affected all varieties of piece goods, the total yardage receding from 59 million yards to 6 million yards, and the value from Rs.1.43 lakhs to Rs.11 lakhs. Under the head "sugar," the quantity of refined sugar dropped from 49,000 tons to 35,000 tons, and the value from Rs.76 lakhs to Rs.36 lakhs. Iron and steel also showed a big drop in value, due mainly to poor imports of galvanised and tinned sheets and plates. The decline in the value of mineral oils was largely due to poor prices of lubricating oils.

Jute Trade Suffers.

The fluctuations in the values of the principal exports of jute as compared with the figures for November, 1929, are indicated below:—

	In Lakhs of Rupees
Jute, Manufactures	2.72 (—1.64)
Jute, Raw	1.35 (—2.95)
Tea	2.09 (—13)
Lac	23 (—40)
Grain, Pulse and Flour	22 (—6)
Hides and Skins	21 (—21)
Iron, Pig	9 (—11)

The export trade was equally slack. All the principal commodities, especially jute, declined in value. As regards the destination of the principal commodities, gunny bags went mostly to Australia and gunny cloth to the United States. Germany continued to be the principal buyer of raw jute and hides. Tea, as usual, was taken largely by the United Kingdom. The United States took most of the lac and skins. Rice, which formed the bulk of export under the head "grain, pulse and flour," went mostly to Mauritius. Japan was the chief consumer for India's pig iron.

General.

A second span of the new Bally Bridge, which is across the Hooghly, has been successfully floated into position. Among those who watched the operations were His Excellency the Governor and Mr. G. L. Colvin and a number of engineers.

*Madras.**Cochin's New Harbour.*

At the last meeting of the Cochin Port Conservancy Board an estimate of Rs.11,000 was approved for Government sanction. This allotment is intended for works to be included in the fourth stage, prior to the preparation of plans and estimates to be placed at the forthcoming conference to be shortly held in Madras.

The original basis for the harbour scheme was the report of the 1920 Committee, which included an estimate for Rs.248½ lakhs. This provided for a good deal of the work now accomplished. The bar dredging has cost less than originally estimated, and the bridges are now estimated to cost only one-third of the original sum.

Decline in Straits Traffic.

The Straits Settlement Government having given notice of the termination of the supplementary mail contract entered into by them with the British India Steam Navigation Company with effect from January 11th, 1931, the Company's managing agents in India have notified that the s.s. "Santhia" will be withdrawn from the Madras-Nagapatam-Straits service after fulfilling the contract. She sailed for the last time on January 2nd. Thereafter the fortnightly steamers, the s.s. "Rohna" and "Rajula," alone will serve this service. The supplementary steamer sailings between Malaya and India carried on by the "Santhia" had to be cancelled owing to the fall in traffic, the number of Indian labourers now repatriated from Malaya having declined very considerably.

Vizagapatam Harbour.

Important dredging operations were carried out at Vizagapatam Harbour in November. In the course of his survey of the harbour construction work during November, the Engineer-in-Chief, Vizagapatam Harbour Works, says that although it was anticipated that the completion of the inner harbour and its approaches to the point where ocean-going vessels could be admitted would not be ready until 1932, a sufficient depth of water was made available over the bar and right up of the inner harbour during November, 1930. From that date cargo was carried between the quays and steamers lying in the roads by means of lighters and tugs.

The effect of that change was that proper quays, adequate storage and proper railway facilities were available in place of the meagre facilities on the old wharf; while the carriage of cargo between steamer and shore would be effected by means of lighters of approximately 50 tons capacity instead of by the present surf boats with a capacity of only 2½ tons per boat. It was, therefore, apparent that facilities available for trade during that intermediate stage would be substantially greater than they had been in the past.

Port Trust Chairmen.

The annual informal Conference of Chairmen of the Port Trusts of the major ports in India, such as Calcutta, Bombay, Karachi, Rangoon, Chittagong, Vizagapatam and Madras, was held in Madras on December 9th and 10th. Mr. G. G. Armstrong, chairman of the Madras Port Trust, presided over the conference, which was not open to the Press. Matters of general interest to Indian ports were, it is understood, discussed at the conference.

Tuticorin Port Trust.

Mr. J. L. P. Roche Victoria and Mr. P. S. Kandya Pillay were elected to represent the Tuticorin Municipal Council as trustees on the Port Trust Board at a meeting of the Municipal Council held recently.

Tuticorin Port.

An important subject dealt with at the Tuticorin Port Trust meeting held on December 13th, Captain H. F. Heycock (chairman) presiding, was the petition from the local hardware importers, asking for the extension of the number of days of grace to five, and the reduction of the rent to 2 pies per cwt. in respect of hardware landed at the port.

The Board adopted the following resolution: "The Board recognises that articles mentioned in Item 4 of the schedule for Dutiable cargo involve more time and labour in sorting out than does bag cargo, consequently it takes longer to remove such goods from the Trust's premises. The Board requests that Government be pleased to alter the rate of 3 pies per cwt., and

Notes from Far Eastern Ports—continued.

that a note be inserted that the articles mentioned in Item 4 be allowed two extra days of grace."

With reference to the letter from the chairman of the Municipal Council, Tuticorin, regarding public promenade and parks near the Harbour Office, the Board was not prepared to hand over any land under its control to the municipality.

Siam.

The total number and tonnage of steamers which called at the port of Bangkok during the month of November were 67 vessels and 65,413 tons respectively, comprising the following items:—

Nationality	No.	Tonnage
British	17	18,869
Norwegian	21	17,830
Japanese	2	4,292
French	1	693
Dutch	7	7,977
Danish	3	8,102
Siamese	16	7,650

The total number of passengers arriving on board these ships was 5,629 persons, comprising 104 cabin and 5,525 deck passengers. Of this figure, 5,341 persons came from Hong-kong, Swatow and Hoihow.

The two largest ships that visited the harbour during the month of November were the Danish m.s. "Alsia" (3,606 tons net) and m.s. "Falsria" (2,771 tons net). Also the Dutch warship "H.M. Flores" (1,672 tons net), with s.s. "Zuiderkruis" (833 tons net), which arrived from Saigon, visited Bangkok, and was moored in the man of war anchorage opposite the Ministry of Marine.

Siam's Foreign Trade.

A decrease was registered in imports at the port of Bangkok for the month of November, 1930, the total being Tcs.11,521,496 as compared with Tcs.14,422,488 registered in the same month of 1929.

In the general merchandise item a total of Tcs.10,285,735 was registered, as compared with Tcs.12,758,684 as recorded in November, 1929.

Exports at the port of Bangkok also registered a decrease for the month of November, 1930, the total being Tcs.7,421,353, as compared with Tcs.12,801,006 recorded in November, 1929. In the rice item a decrease of Tcs.3,523,946 was recorded. Teak exports also registered a decrease of Tcs.216,185. In the other goods item a total of Tcs.7,421,353 was recorded in November, 1930, as compared with Tcs.12,801,006 as registered in November, 1929.

Imports at the ports of the provinces for the month of October, 1930, showed an increase of Tcs.223,941 as compared with the return for October, 1929. Exports for the same month registered a decrease, the total being Tcs.1,900,366, as compared with Tcs.3,406,205 recorded in October, 1929.

Ceylon.

Ceylon's Foreign Trade.

The Customs returns for November, the latest returns available, continue the downward trend, which manifested itself first twelve months ago. The value of imports is Rs. 18,865,668 and the value of exports is Rs. 22,625,312. The respective values show a drop of several thousands when compared with those of October, which are, respectively, Rs. 21,570,062 imports and Rs. 23,346,553 exports. The values for November are staggeringly lower than the values for the same month in 1929 and 1928. As compared with November, 1929, there is a difference of Rs. 15,314,526 to the bad in imports and a difference of Rs. 8,482,872 to the bad in exports, both domestic and otherwise. November, 1929, however, it must be explained, was somewhat of a boom year in imports. As compared with November, 1928, the shortfall is Rs. 13,776,854 in imports and Rs. 12,083,910 in total exports.

Never in any months of years 1930, 1929 and 1928 have the returns been so low. The lowest returns, before those of November set up a record, were the returns of October; so that the returns of December can safely be expected to create a new record, which may be broken every successive month. The 1930-31 financial year which began in October has thus had its first two months set the most poor returns.

The imports and exports returns for the eleven months ended November, 1930, are Rs. 580,225,856. They show a total decrease of Rs. 187,654,104 from the returns of 1929 for the same period and a decrease of Rs. 172,274,278 for the same period in 1928.

New Representative of Import Interests.

His Excellency the Governor of Ceylon has sanctioned the appointment of Mr. A. B. Ricketts to be an unofficial member of the Colombo Port Commission, representing import interests, in place of Mr. J. A. Tarbat, who is leaving the Island.

Colombo Harbour Police.

Mr. J. Ashton, who was for nearly twenty-five years attached to the Colombo Harbour Police and latterly the Chief Inspector of the Police, has retired. Mr. Ashton sailed for England in the B.I. steamer "Mulbera." Before leaving the jetty several officers of the Force and a large number of friends bid farewell to the "Admiral of the Harbour Police," as this popular officer was known. Inspector E. W. Titcombe, of the Harbour Police, is now acting Chief Inspector.

Colombo's Second Assistant Docking and Shipping Master.

The Crown Agents for the Colonies have selected Mr. T. J. Mason for the post of Second Assistant Docking and Shipping Master, Colombo Harbour Engineer's Department. Mr. Mason has already assumed his duties.

Dredging.

The dredger "Sir William Matthews," during the last month, has dredged 29,000 cubic yards of material in Colombo harbour. The areas dredged were a shoal at the western side of the western entrance of the harbour and the high patch in the channel between moorings Nos. 33 and 51.

Bombay.

Bombay Port Trust.

At a meeting of the Trustees of the Port of Bombay held on 16th December, 1930, the following were the main items of business disposed of:—

The Trustees passed a resolution regretting the resignation of their colleague, Mr. P. Barker, on his retirement from India. The election of Mr. W. L. Clement by the Chamber of Commerce as a Trustee *vice* Mr. Barker was also recorded.

Mr. W. R. S. Sharpe, M.Inst.T., Deputy Chairman, was granted an extension of 18 days' leave from 1st February, 1931.

Mr. Shaik Abdul Cader, B.A., one of the probationers engaged in 1928 to undergo a four years' course of training in the Port Trust, was appointed to a permanent scheduled post in the docks in the grade of Rs. 225-20-325 p.m.

The quotation of the Burmah-Shell Oil Storage and Distributing Co., of India, Ltd., of Rs. 39 per ton (less a rebate if the quantity taken in the year exceeds 500 tons) was accepted for the supply of furnace oil to the Port Trust during 1931.

In considering a representation from the Grain Merchants' Association for a reduction of the rents at the Ryan Grain Market in view of the trade depression, the Trustees observed that the rents were very favourable even under present conditions and having regard to the constant demand for accommodation at this market, they were of opinion that there were no grounds for any reduction. A representation was also considered from Messrs. Killick, Nixon and Co., Agents, the Shivrajpur Syndicate, Ltd., regarding the increase of surtax from 33½ per cent. to 50 per cent. on manganese ore, and it was decided to reply to the Agents that the Trustees regretted they could not differentiate in favour of manganese ore, or any other item of traffic, in respect of the levy of the surtax; wharfage on ores in Bombay compares very favourably with that charged at other British India Ports, and to assist the trade the Trustees in 1929 abolished their railway through freight of Rs. 3/- per wagon.

At a meeting of the trustees of the Port of Bombay held on December 30th, 1930, the following were the main items of business disposed of:—

The trustees decided to invite applications by advertisement from graduates of Indian universities for two posts of probationary assistant managers in the docks, the two candidates entertained in 1928 having been absorbed in permanent appointments.

An expenditure estimated at Rs.47,932 was sanctioned for new fenders at Pir Pao Oil Pier, the amount to be expended during the current year being restricted to Rs.10,000.

A reduced rate of wharfage of 8 annas per bale was sanctioned—subject to the confirmation of Government—on raw cotton imported in pressed bales not exceeding 270 lbs. each, in view of the fact that American cotton is now being prepared for export in round bales of approximately half the weight of the usual square bale; it was also decided to reduce the Port Trust share of the fumigation charge for these round bales from 3 annas to 2 annas per bale.

The Board considered a representation from the Sugar Merchants' Association to exclude Sundays and holidays in computing extra fees and decided to inform the Association that they were unable to agree to their request, as it would only cause delay in effecting deliveries and bring about congestion in the docks. The trustees observed that the extra fees incurred on sugar amount to a very small sum, which points to the fact that it is quite possible to clear consignments within the free period; furthermore, the merchants already enjoy the benefit of "dies non" in computing the free days.

1931.

ached
ector
nd in
veral
s bid
this
r, of

er.
F. J.
ping
ason

last
umbo
tern
high

l on
s of

n of
dia.
of

was
31.
en-
r in
post

and
bate
was
ing

nts'
ain
ved
ndi-
mo-
no
also
the
tax
was
ney
her
ge
ged
he
of

on
of

ent
pa-
tes
ent

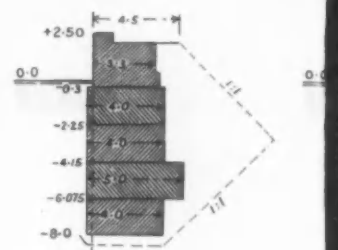
for
ed

ed
on
ew
or
he
ist
3

er-
m-
at
ly
in
ed
ct
ee
fit

PORT OF PIRAEUS.

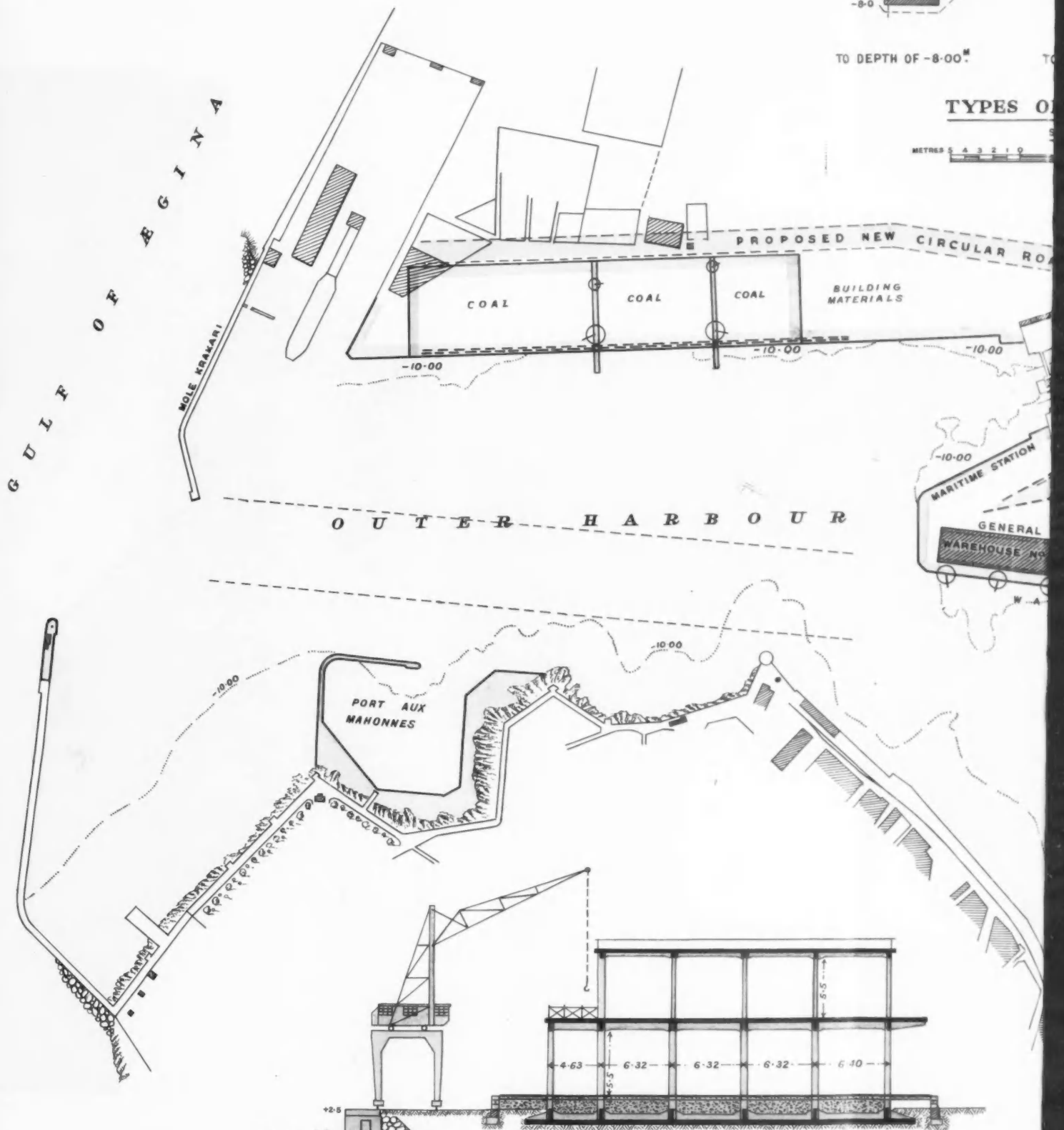
UNDER THE JURISDICTION OF THE PIRAEUS HARBOUR AUTHORITY.



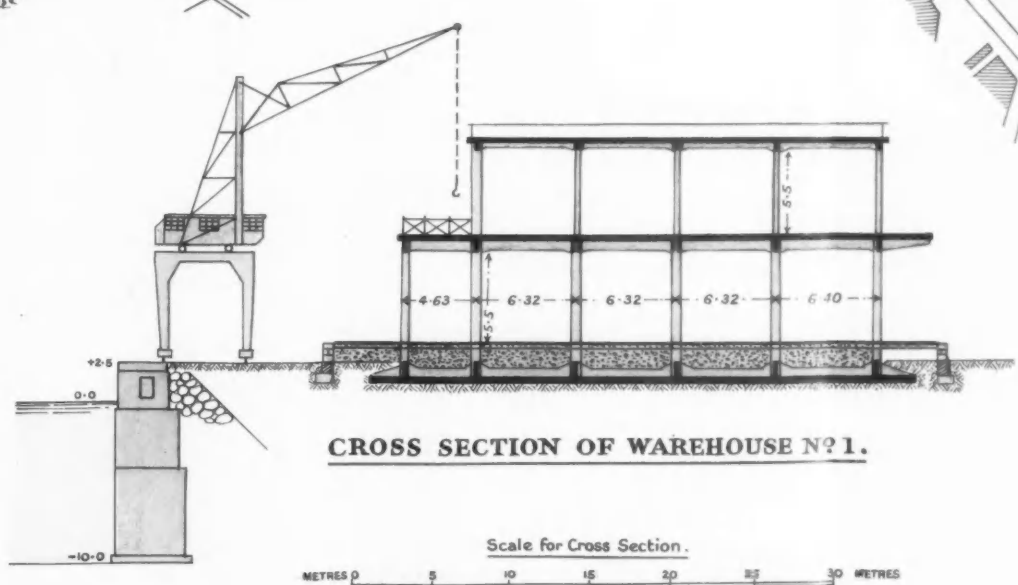
TO DEPTH OF -8.00 M.

TYPES OF

METRES 5 4 3 2 1 0



CROSS SECTION OF WAREHOUSE N° 1.



Scale for Cross Section.

METRES 0 5 10 15 20 25 30 METRES

